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28654

THE
JOURNAL OF HORTICULTURE,
COTTAGE GARDENER,
AND
COUNTRY GENTLEMAN.

A CHRONICLE OF THE HOMESTEAD, POULTRY-YARD, APIARY, & DOVECOTE.

CONDUCTED BY

GEORGE W. JOHNSON, F.R.H.S., AND ROBERT HOGG, LL.D.

THE FRUIT AND KITCHEN GARDENS, by Mr. J. ROBSON,
Gardener to Viscount Holmesdale, M.P., Linton Park; and Mr. J.
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HOUSEHOLD ARTS, by several Ladies.



VOLUME XXX., NEW SERIES.

VOL. LV., OLD SERIES.

LONDON:

PUBLISHED FOR THE PROPRIETORS, 171, FLEET STREET.

1876.

LONDON :
PRINTED AT THE JOURNAL OF HORTICULTURE OFFICE,
171, FLEET STREET.

TO OUR READERS.

— x —

WE were rejoiced to find when in the west of England that this is called "The Rose Journal," and we accept the title as a monitor to endeavour that it shall continue to deserve it. The Rose is our national emblem, and will remind us to watch over the interests of all those to whom we are devoted. To the exiled and to the town invalid as well as to the rubicund country florist let us remember—

"When pain afflicts, or sickness grieves,
A Rose the drooping heart relieves."

Let us endeavour to be welcomed everywhere like the Rose, of which it was said—

"I'll place thee near my soul;
Not in my heart indeed, but in my button-hole."

Let us be welcomed like it at all seasons. "Roses in December" are even more prized than

"When the queen of June
With other flowers abounds, and birds in tune."

Let us be reminded by it to be wisely silent—

"For o'er his desk the editor uphung
The flower of silence, to remind each guest,
When friendly conversation loosed the tongue,
Under the Rose what pass'd must never be express'd."

We will accept the title also as a good omen—as prophetic that our readers and contributors will continue to aid in making this Journal's office a bed of Roses for

THE EDITORS.

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WEEKLY CALENDAR.

		JANUARY 6—12, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.		Day- of Year.
Day of Month.	Day of Week.		Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	m.	s.		
6	Th	Royal Society at 8.30 P.M.	41.1	39.1	35.4	8	7	4	4	11	51	9	19	10	5	56	6	
7	F	Geologists' Association at 8 P.M.	41.7	39.1	35.5	8	7	4	6	0	13	8	49	11	6	28	7	
8	S	EPHRAIM—OLD CHRISTMAS DAY.	41.0	39.8	35.9	8	7	4	7	0	47	5	21	12	6	48	8	
9	SUN	1 SUNDAY AFTER EPHRAIM.	41.2	39.8	36.0	8	6	4	8	1	35	6	47	18	7	14	9	
10	M	Royal Geographical Society at 8.30 P.M.	42.0	39.8	36.1	8	5	4	10	2	46	7	58	14	7	38	10	
11	Tu.	Royal Medical and Chirurgical Society at 8.30 P.M.	41.5	39.1	35.8	8	5	4	11	4	14	8	48	●	2	2	11	
12	W		42.1	39.5	35.8	8	4	4	12	5	48	9	20	15	8	26	12	

From observations taken near London during forty-three years, the average day temperature of the week is 41.2°; and its night temperature 39.8°.

COVERING OUTSIDE VINE BORDERS.



MR. ROBSON has handled this subject very ably as regards the production of early Grapes. There can be no doubt that it is bad practice to have the roots of a Vine in a temperature little above freezing when the upper part of the plant is afforded summer heat. Even when Vines have the benefit of a bottom heat of 80° or 90°, as those have which are grown in pots or heated borders, they never commence root-action

till some of the leaves are grown to nearly their full size, and when the roots are in a very low temperature I believe the flowers often expand before there is much root-action. The evils arising from this are patent to every practical man, and I have endeavoured in former papers to show that it is one of the most fertile causes of shanking.

I think, from what Mr. Robson says, he, like myself, would prefer the roots of Vines intended for forcing to be all inside; but sometimes we have no choice in such matters, and when such is the case we cannot do better than follow Mr. Robson's advice. It is, however, principally upon the subject of late Grapes which I wish to say a few words.

I have come to the conclusion that for these also it is the most economical as well as the most satisfactory plan to have the borders entirely inside. I am not now speaking of amateurs' houses where a little of everything is grown, but of vineries proper. I know many who have the charge of extensive vineries will argue that they give their Vines both outside and inside borders, and that they always find the greatest number of healthy roots in the outside border. This only proves that the Vines know their wants better than the man does who has charge of them. Give them what they require in the inside border and they will not then be so likely to ramble outside, as the temperature of the soil under glass is certainly more suitable to them than that of the cold soil outside. In nine cases out of ten I believe it is only a question of water. There are not many inside Vine borders in the country which have a sufficient supply of water. It is of no use measuring the quantity which falls from the clouds in any country and then giving a similar allowance to indoor plants. The conditions are all so different; our borders are so completely drained and so porous, they are generally cut off from the subsoil, and we with all our modern appliances and skill cannot distribute the water so economically as Nature does it. We must always allow for at least three-fourths of the quantity we give running away immediately into the drains, and a much greater proportion even than this at the first spring watering if the borders have been kept dry during winter, as I know many are. It is, however, a great mistake to keep them dry at any time. I do not like watering if it can be avoided when ripe fruit is hanging on the Vines, and I think it is better to have the borders covered with short litter or something else at

such times to check evaporation. Immediately the fruit is off all inside borders require a good heavy watering, and I am pleased to see that the practice of giving them such is becoming every year more popular. The drying of the roots in winter is totally at variance with the teachings of nature, and great injury is committed in ignoring those teachings. The roots of Vines are not, like the Onion and Hyacinth, connected with a bulb to store up matter for future growth, but each root contains its own store, and must be kept moist or its virtues are lost.

If it is argued that there is not sufficient room in many vineries for the roots I say, Consider what is done with Vines in pots year after year, and then reckon up the number of cubic yards of soil a moderate-sized house contains. The fact is, the quantity of soil is generally more than doubly sufficient, but the roots are allowed to dart through the greater portion without making any use of it. It does young Vines much good if they are vigorous to shorten their roots now and then; it gets them into the habit of staying at home.

Mr. Robson says his Hamburgs were not thin-skinned, and he seems to think that they ought to keep better for that. I do not think so. I know Lady Downe's with its thick skin keeps longer than the Black Hamburg, which has a comparative thin skin, but I do not think it is because of the thick skin that it keeps, and I am in hopes of seeing before many years some thin-skinned varieties which will keep. The skin of Alicante with me is not nearly so thick as that of Lady Downe's, and yet it keeps as long as that popular sort does. It is but fair to add that I consider Alicante loses very much in flavour if kept till April, and is not then so good as Lady Downe's. In December and January I prefer Alicante.

Is not a comparatively thin skin on any given kind of fruit a general accompaniment to high finish and other good qualities—not Grapes alone, but Apples, Pears, Oranges, &c.? and do not Grapes which have a comparatively thick skin for their kind, although they colour-up well, generally turn a little foxy-looking afterwards? I have some Hamburgs which have not by any means a thick skin which are keeping very fairly, and I am in hopes of having some of them for the beginning of January. They are grown entirely in an inside border, and were ripe in the beginning of September. I find thick-skinned Grapes, although the flavour may be good, like Mrs. Pince, are not at all popular with the gentry, and I endeavour to make the Hamburgs last as long as possible.

I think we in the southern and western counties have one difficulty with late Grapes which the northern growers do not experience to so great an extent. It is that after the Grapes are ripe in autumn we have such sudden fluctuations of temperature. Perhaps it is frosty at night, and in the morning before daylight we have a temperature of 55° or more. This happened last year very frequently, and at such times, unless a high temperature is maintained in the house, it is exceedingly difficult to prevent moisture condensing on the berries. I therefore

think it advisable not to have the late Grapes ripe in September, as most growers recommend, but that the beginning of October is preferable, because then we can maintain a high temperature all through the month with advantage to the Vines and fruit.—WILLIAM TAYLOR.

A NEW MODE OF GROWING GRAPES.

THIS new mode embraces two alterations of the old mode, consisting in a peculiar construction of building and also in a peculiar construction of the receptacle for the roots. I will not waste many words in the description of my plan.

The house, now seven or eight years old, consists of slanting sides running north and south. These sides are $3\frac{1}{2}$ feet from each other at the top and 7 feet at the bottom, and 9 feet in height; the top is covered with glass in the usual manner. The houses I first built were only 27 feet in length, a door at each end being sufficient for ventilation. The Vines are trained to the sides. The peculiarity of these houses consists in the angle of the sides allowing the rays of the sun to glance off at the time when burning usually takes place. During the several years Grapes have been grown on this plan not a leaf has been scorched, although both doors have been closed for ripening during the hottest part of the day—in fact these houses are sun-traps, the air of which becomes heated to 90° and upwards, the only effect being to ripen and thoroughly blacken the crop.

These houses cost me £12 10s. each; they are imperishable, the wood having been soaked in creosote, and there is no putty. I do not think there has been more than one broken square of glass since their erection; they cost nothing for repairs. Persons from distant parts of the country have come for patterns of these houses. I had not finer bunches or berries of Black Hamburgh in any of the other houses. There is no artificial heat.

My plan of treating the roots of Vines is rather a novel one. Some years since when visiting a vinery at Sootney Castle I observed that there was a trench, 3 feet wide and 3 feet deep, out through the Vine border close to the wall. The gardener informed me he did this in order that he might fill it with leaves, which exhaled sufficient moisture to keep the air from becoming too dry. I have never seen more magnificent Grapes than in that house. He called my attention to the manner in which the roots extended themselves into the leaf mould. He pulled up one of the main roots, the end of which was a mass of rootlets resembling a sponge. I then saw at once the cause of his success; he informed me he cut these off every year, took out the somewhat exhausted leaf mould, and added fresh leaves as before well trodden down. From this description it will be easily seen how the following plan would answer:—

Make a trough 10 feet long by 3 feet wide, and 1 foot in depth, to be slightly slanting to admit of water passing out. This trough can be constructed of wood (the commonest fir being the best) soaked in creosote at 180° temperature. This trough will last for ever if recently creosoted. Pave it on all sides with old turf before planting the Vine. The soil should be of the richest description, and well-rotted leaf mould; there will be 30 cube feet on five bushels of soil. By the time the Grapes are ripe this will be reduced to about one-half, unless more has been added on the surface, which, if well rotted, has a good effect. When the plant is at rest let four men with four steel forks lift up the entire roots and shake off the soil. If necessary prune the roots, take away all the old soil, half-fill the trough with fresh soil, lay the roots as soon as possible evenly on this surface, and then fill up to the height of the trough, which, if required, may be on small wheels, and if placed inside one of the above houses must be only 7 feet long, and there may be two rods to each Vine. Boards can be placed across the troughs for walking on.—OBSERVER.

IRIS RETICULATA.

THIS charming Iris can be enjoyed only when under glass, but I find that when grown in pots the bulbs become smaller and do not flower the second year. As the price still keeps up I presume that other people are equally unsuccessful. Possibly the plan I adopt with the Persian Iris might answer with this—namely, to grow it in the open border, picking off any flowers. In autumn lift, pot the best plants, and return the others to the ground. Iris pavonia is not hardy enough for this treatment, but it is so cheap that there must be some easy

plan practised in Holland of obtaining bulbs of a flowering size.—G. S.

THE CYCLAMEN,

AND HOW MANY SPECIES ARE THERE IN ORDINARY CULTIVATION?

As the Cyclamen has been recently alluded to, and the names of about a score, either species or varieties, have been mentioned, may I ask how many really distinct species of Cyclamen there are in ordinary cultivation for decorative purposes, and what are their distinctive features? I confess being completely at a loss to make anything like the number put forth as having distinctive botanical names; whereas if every form or change of colouring which a batch of seed will produce has to be dignified with a name the list may be indefinitely extended. If anyone would undertake the task of defining them into anything like a list, however short it may be, of distinct botanical species he would confer a boon on horticulture; or if this be not attainable, would some one give us the leading characteristics of each section?

For my own part I am very sceptical of there being more than three or four really distinct species in ordinary collections, or rather in cultivation for decorative purposes, and very possibly there may not be so many. Where, then, have all the other names sprung from? And how many could with propriety be appended to the very meritorious collections of finely flowered plants that grace horticultural shows in winter as well as in autumn and spring? The difficulty seems the greater from the fact that it often happens that a batch of seedlings from one plant present features widely different from each other both in the making and colouring of the foliage as well as in that of the flowers. The former, which is often regarded as an important part of the plant, is occasionally found with plain rounded leaves devoid of any marking, as well as with foliage of other shapes, and equalling the Begonia in the beauty of its colouring. Now, is it right to call both these examples varieties of *C. persicum*, which seems the most suitable name for the kinds that require the aid of a glass structure in winter, and, in fact, are all the better for a little heat to bring out their flowers at that time? But now and then, in favourable seasons, a fair bloom may be had out of doors in the autumn from the same class of plants when the summer and early autumn have favoured their advancing into flower; but this flowering out of doors, like that of the Camellia under like circumstances, is not always to be depended upon, the ordinary period of flowering being winter and early spring; but that does not answer the question of what species or variety it is related to, or rather to which it belongs.

We all know the ordinary white Cyclamen, that flowers before its foliage very early in the autumn, is a hardy one, blooming with us about the same time as the autumn Crocus, which also presents itself without foliage, and in warm summers both are frequently in bloom by the end of August, the ground often dry and very hard at the time, yet this Cyclamen may often be met with a mass of flowers at that time, nestling at the root of some plant or tree where it is not entirely shaded. But, somehow, it is very shy in producing seed in such a position compared with the tender varieties when planted out in summer. Perhaps, however, the advantages given to the latter in the way of leaf soil and the like in which the plant can bury its seed vessels may conduce to its doing better than one whose seed would seem to ripen in the winter. Be this as it may, I do not recollect meeting with any self-sown plants of the hardy one alluded to, while the other comes up by hundreds in the bed where the plants have been grown in summer.

Now the early autumn-flowering hardy Cyclamen would seem to be quite distinct in every point of view from the greenhouse class, but how many really botanic forms the latter can lay claim to I should like to know; also whether the whole may not be the result of hybridisation, artificial or natural, or both, that has given us the plants now so much admired; and if so, would it not be as well to drop many of the names that now serve no further purpose than swelling-out catalogues of such plants? In doing this I by no means wish to discourage the cultivation of as many varieties as can be had, but I ask, Is it right to give such varieties botanical names? and to ask some one to define what really distinctive species those under ordinary cultivation consist of, and whether giving such names as *C. ibericum*, *africanum*, *neapolitanum*, *persicum*, and others, may not after all be

simply synonyms for one and the same plant found in all these countries, but differing only in a slight degree from each other from causes owing to their sojourn in their respective homes, but which, when exported to others, revert into one and the same form? I wish some one would enlighten us on this head; it would be acceptable information to the general public, while to the ardent cultivator of ornamental varieties it would damp his ardour for improvement to be told his varieties had only one parent. Recent investigation points to more things than *Cyclamens* having only one parent stock. In asking for the information alluded to, I think also that some further remarks on the culture of these plants may possibly turn up during the inquiry.—J. ROSSON.

PARSLEY.

PARSLEY retains the character and uses which it had among the Romans. Pliny says, "Parsley is generally esteemed; sprigs of it are floating in the milk given for refreshment in



Fig. 1.

country places; as a seasoning for sauces it is especially favoured;" and he then commends it as a poultice for weak eyes and tumours. It is needless to particularise the various kitchen uses to which it is now applied, but it may be not so well known that in England it has been worn in the hat "in a braverie," which seems a remnant of the practice of making wreaths of it to crown the victors at some of the Grecian games.

Phillips says that Parsley was not cultivated in England until 1548, the second year of Edward VI.'s reign. This may be so, but we know that it is mentioned as a garden plant in our earliest books, and nurserymen have been specially assiduous to raise handsome curled-leaved varieties for garnishing purposes. The best we have seen is that recently introduced by Messrs. Carter & Co., High Holborn. This is represented in the above woodcuts, but they only approach to the minuteness of the divisions of the leaves. Messrs. Carter & Co. have named it "Fern-leaved Parsley," but "Fimbriated" or "Moss-like" would be a more truth-suggesting name.

LARGE VERSUS SMALL SEED FOR PLANTING.

DR. GUSTAV MAREK has recently published a very valuable monograph on this important subject, embodying the results of a great number of experiments and observations made by

him at the experiment stations at Halle and Leipzig. Most convincing proof of the superior value of large seed is furnished by the results of some of his experiments in the field. Beans and Peas were planted in the garden, small and large seeds of each kind being planted on adjacent plots, the Beans 12 inches apart each way, and the Peas in rows 10 inches apart and 2 inches apart in the row. Not only was the crop carefully harvested and measured when ripe, but the progress of growth was closely watched during the season. The larger and more uniform growth of the plants from the larger seeds, from the beginning to the end of the season, is very plainly exhibited in the condensed tabular form in which we have arranged the results of these experiments. Height is given in inches and weight in ounces, if not otherwise specified.

		Plants from	
		Large Seed.	Small Seed.
BEANS.			
May 28rd.—Height of plants	6-8	8-6	
Average number of leaves	8	6	
June 9th.—Height of plants	12-5	10-11	
June 11th.—Number of plants in bloom	45	12	
June 17th.—All the plants in blossom. Ten average plants taken up from each plot. Average height of plants	34	30	
Average number of leaves on each plant	18	11	
Aggregate weight of the ten plants when dry, in grains	897	576	
July 31st.—Pods fully formed. Whole number of pods	3,186	2,799	
August 5th.—Crop harvested. Total weight of vines and pods	219	188	
Weight of seed, first quality	162	121	
Weight of seed, second quality	6	25	

In whatever way the plants are compared, and however minute the measurements that are made, the advantage remains always with the plants from the large seed. The much greater uniformity of growth cannot be shown in the table without taking too much space, but it appears all through the details given in the original paper. To give one or two instances: Of the ten plants taken up June 11th all but one of those from the large seed had its leaves as given in the table, and the odd one had twelve leaves; on the other hand, of the plants from the small seed some had ten, some eleven, and some twelve leaves, and one had thirteen. The uniformity of the plants from the large seed was marked. At the rate given in the above table the increased yield per acre of seed of the first quality that may be obtained by the use of large seed rather than small would be 250 lbs. A similar course of experiments with Peas gave the following results:—

		Plants from	
		Large Seed.	Small Seed.
PEAS.			
May 28rd.—Height of plants	6-8	4-5	
June 6th.—Height of plants	18	10-12	
June 19th.—Ten average plants taken up from each plot:			
Average height of these plants	44	34	
Average number of leaves	15	13	
Average weight of the ten plants, green	11-5	9	
Ditto, dry	2	1-6	
July 26th.—Crop harvested:			
Total weight of vines and pods	301	192	
Weight of seed, first quality	48-5	19	
Ditto second quality	19	87	

In the case of the Peas as well as of the Beans, the plants from the larger seed are better throughout the season than those from the small seed; the superiority of the former is specially marked in respect to the quality of the seed harvested, as shown in the table.

Prof. Lehmann of Munich carried out a somewhat similar course of experiments with the same plant, and with still more striking results in favour of the use of large and carefully selected seed; and in his experiments not only did the larger seed yield a larger crop from the same number of plants, but a much larger proportion of the small seed failed to germinate in the field, or at least to send the young plants to the surface of the ground, than of the large seed.—(*New York Tribune*.)

THE POTATO.

I REMEMBER it was the late Dr. Lindley who despondently prophesied the decadence of the Potato altogether, and it was this which caused me to first rush into manuscript and to write as follows:—

"Notwithstanding the general failure of the Potato crop this year, what I have privately urged relative to its culture I still maintain. Perseverance in its cause must be insisted on; and in defiance of all that grim foreboders may sing or say against it, I for one intend to plant Potatoes. Let men say all they can possibly say in foretelling its certain destruc-

tion, I answer in reply, We do not live in the times when wiseacres are prophets."

At the present time, according to the "genuine Potato" who "does not like to be under-rated," it is my "novelties" only that are to be extinguished. I am very glad to learn that, because we shall still have some kinds left, and my existence seems to be wound-up in Potatoes of some sort. Certainly the disease came very early this year, and my seedlings being mostly earlyish sorts would be more likely to suffer most this season by consequence; but I could show your correspondent as fine samples of tubers in bulk as even a Scotchman would desire to see. I never had a better yield or one freer from disease, especially Rector of Woodstock, though I scarcely remember the disease to arrive sooner. In nine summers out of ten the *Peronospora infestans* attacks us about the beginning of August, and in nine seasons out of ten the majority of my sorts would be found to be ripe by then and ready to be taken safely from the ground. As to flavour, who shall decide? Why, it was written, to my utter astonishment, by a *confrère* in a contemporary a short time ago, that by some the some of perfection of a Potato should be no flavour at all, but the salt wherewith it was salted! I wonder how the admirers of that dictum would esteem the Dunbar Regent! I certainly have endeavoured to impart a refined flavour into my seedlings, and I was under the impression, along with a host of friends, that I had attained to superior flavour in my sorts. The "DUNBAR REGENT" says No. Well then I will charitably suppose it is uneducated in its taste, and "Sawmle" may be enabled to taste more justly than others.—ROBERT FENN, Rector, Woodstock.

GRAPES NOT COLOURING—RIBBED GLASS.

"E. H." on page 482 narrates two instances of Grapes not colouring, the Vines being grown in houses glazed with rough glass. He is at a loss where to attach the blame, and solicits the opinions of others who can communicate their experience.

Heavy cropping alone predisposes to a deficiency of colour in Grapes; in fact, if the Vines are too heavily cropped the Grapes cannot colour well, let the glass or the soil be of whatever nature it may. I think heavy cropping of his Black Hamburg Vines has much to do with the failure of which he complains; this he can conclude if the Trentham Black which coloured well in the same house was less heavily cropped than the Black Hamburg.

But heavy cropping, it should be remembered, is a relative term, and cannot be satisfactorily defined by any given weight of fruit per yard of rod. The condition of the Vines is of primary importance in assessing their fruit-bearing powers. A healthy Vine in a good and well-fed border may be lightly cropped with 20 lbs. of Grapes, while another of the same size may be overcropped with half that weight of fruit. We must, therefore, look to the condition of the Vines, and especially the borders, in determining what is a heavy and what a light crop of Grapes. "E. H." is evidently not satisfied with the borders, for he proposes to renew them, and I am, therefore, confirmed in my opinion that the principal cause of the lack of colour in the Grapes is the overcropping of the Vines.

I assume that "E. H." is an amateur, and as the Vines of many are in the same condition as are his I may usefully communicate a little instruction which I think applicable.

The first point to ascertain—Is the border well drained? If it is not I should take the border out; but if it is—if the water can pass away freely (whether by drains or a naturally porous subsoil), I should not take up the Vines and make an entirely new border, as by that operation time, Grapes, and money would be wasted. I should remove the surface soil, baring the principal roots. These I should "notch" at 3-feet intervals by making vertical cuts nearly to the pith, then slanting upward—not downward, mind—to meet them, taking out the pieces. I should then cover the roots with an inch of small charcoal or rough wood ashes, and then 4 or 5 inches of fresh soil. If to this can be added (in the spring, just previous to starting the Vines) fermenting material to raise the surface of the border to 100°—not more—a radical improvement cannot fail to follow. The old roots will emit spongioles, which can be kept near the surface by further dressings of soil, manure, and water. If fermenting material cannot be had, apply in its stead a heavy covering of rich manure, and fresh roots will be certainly but more slowly emitted than by the aid of surface heat. When once a Vine border can be netted with feeding roots to a foot in depth from the surface I care not what is

below; provided the water can pass away, Grapes will be produced above if the management of the Vines is correct. If "E. H." follows this practice and trains thinly, so that every leaf can develop itself, his Vines will improve; but it must be kept in mind that the growths must be disposed more thinly under rough than under clear glass. Every ray of light is important, and every leaf must be free.

I will now state that I do not consider rough glass suited for vineries, and my reasons for so thinking. In my neighbour's garden are a pair of vineries. They are large, and were erected at great cost, and were glazed with rough glass. They have long been in the care of a good gardener, but to colour the Grapes he had to reduce the bunches to less than a "half crop;" to those Vines it was really a full crop. The glass, he was satisfied, was at fault, but the expense of reglazing with clear glass could not be incurred. One day a bright thought struck him that the glass in the vineries, which was rough, and in the frames, which was clear, was of the same size. He measured and found it so, and then with his men set to work and exchanged the glasses, finding sufficient clear glass from the frames to glaze one vinery, the other remaining rough-glazed. The additional light effected a great improvement, much larger crops of Grapes being perfected than in the other division, all the Vines having the same border treatment and temperature.

In hot sunny summers Vines will flourish under rough glass; but in a dull season like the last, and especially where much artificial heat could not be afforded, rough glass is a great obstacle to the production of good and satisfactory crops of Grapes.

With better root-action and in average seasons "E. H." may find his Vines sufficiently improved to prevent him incurring the expense of reglazing; but if expense is not an object he may be tolerably certain that their improvement would be proportionally greater if they could have the advantage of more light—clear glass.—A NORTHERN GARDENER.

NOTES AND GLEANINGS.

We have had sent to us some specimens of FINEST'S ORNAMENTAL KALE, various in colour, and desirable for those who use such garnishing.

—A CORRESPONDENT says that a most FRAGRANT ROSE is Baron Haussmann.

—THE prices of admission to the ORIENTAL PALACE are reduced to 1s. on ordinary Saturdays, and 6d. on ordinary Mondays.

THE EUCALYPTUS GLOBULUS AS A PROMOTER OF HEALTH IN MARSHY PLACES.

A few years ago paragraphs went the round of the papers extolling the virtues of the Eucalyptus globulus in rendering marshy places in subtropical and temperate regions more healthy, and, in fact, it was asserted that the plant had the power of expelling fever entirely from such districts. This valuable property seemed almost too good to be credited, although fresh evidence kept forthcoming of its efficacy in that respect—in fact, it seemed that the friends and admirers of this valuable tree were likely to ruin its qualifications by assuming a too extravagant position for them, and the consequence was that for some time afterwards we heard no more of the Eucalyptus and its virtues, and some sceptics went the length of asserting that its qualifications in the way indicated extended no further than the same number of Willows might have done; in other words, that the Eucalyptus was only to be credited for assisting to dry up the marsh on which it was growing, which might be more effectually done by drainage.

This, perhaps, was drawing a conclusion from works at home, without considering the difference which climate, situation, costliness of labour, and several other things intervened to render comparison impossible. It is possible that the Eucalyptus may yet be of service, and it may even deserve all the qualities its greatest admirers attribute to it. Be this, however, as it may—and I do not by any means deny its merits, nor yet admit them to the full—I am pleased again to see it once more brought before the public, and in a manner likely to elicit some useful observations. Without in any way committing myself to any opinion on the case, I strongly recommend it to the consideration of my gardening friends, more

especially to those about emigrating to a warmer country than Great Britain, and any light that can be thrown on the matter will be a boon to the public at large; for the merits of quinine, great and valuable as they are, were not known a few years ago, while at the present time every quarter of the globe admits its valuable qualities. Arguing from that, we have no right to doubt the utility of the Eucalyptus as a health-preserving agent. At the present it is only employed in England as a subtropical decorative plant, where, from its distinct form, and also colour of the stems and foliage, it is very ornamental.—J. R.

OLD TREES.

WELL done, "RADICAL CONSERVATIVE!" what a suggestive letter is that of yours about old trees on page 581. I heartily agree with every word of it, and hasten to contribute my quota upon so congenial a subject, and one, too, of such great importance.

I will at once proceed to offer a few hints on the value of old fruit trees. I have had trees of Green Gage Plum in many forms, from closely pruned dwarf bushes up to tall unpruned standards, and it is a singular fact that I have never had such fine Green Gages as I used to obtain at Egerton off a couple of very old fan-shaped trees trained to an east wall. These trees had spurs projecting quite a foot from the branches, many of which were actually decaying and hollow, and yet most of the fruit was absolutely magnificent, betokening such inherent vigour in the sturdy old trees as enabled them, even in decay, to bear the palm from trees quite free from decay or disease of any kind. I allude to this fact because it taught me never to lay violent hands upon old fruit trees or to adopt hasty or sweeping measures to remodel or improve them. It was a lesson of the greatest value to me, for previously I had been somewhat of an ardent reformer in the treatment of such old trees, regarding crooked limbs and large spurs as monstrosities. Well, there they were together with a grand old Apricot, a Jargonelle, and Beurré Diel Pear, and an immense old Brown Turkey Fig, all with crooked limbs and rugged bark, unkempt and semi-wild; but then they gave good fruit and plenty of it, and when visitors used to exclaim at my droll-looking trees and perchance go away with a somewhat doubtful opinion of their management, I considered myself anything but an object of pity, regarding my bushels of Figs and Apricots and my splendid Gages and Jargonelles as so fair an equivalent for an unsightly tree or two, that I would certainly not exchange them for their trim young trees, and dozen or two of fruit, upon any consideration. These observations may, at first sight, appear somewhat antagonistic to what was said lately about old Peach and Nectarine trees, but in reality they are not so; for while I was content to do no more with the Plum, Pears, Apricot, and Fig than to thin crowded branches and to keep all within bounds, some old Peach trees were cut quite down and made to throw young wood as was stated.

Apricot trees are proverbially tender subjects; canker rides rampant over the majority of them, destroying here a branch, there half a tree, or perchance killing the tree outright, acting in a fitful, capricious, almost mysterious manner. And yet all are not prone to suffer from its insidious attacks. There are notable exceptions in trees both young and old, but the most remarkable are those very old trees like that at Egerton, hale, sturdy, and vigorous, without a blemish, and yielding year by year abundant crops of excellent fruit. Such trees are by no means uncommon, and they are, in my opinion, just so many examples of the good effects of suitable stocks, the result of chance rather than of any wisdom or penetration of those in whose hands the trees originated. I am convinced that a full and sufficient trial has not yet been given to this matter, and that a great deal has yet to be learned on the selection of stocks which are best suited to certain soils. This subject, however, I may approach at a future time.

The treatment of old Apple trees is a matter of too much importance to receive full justice in a paper of this kind, but it may be well to touch a little upon its more salient points. This may be done with some confidence, as I have had several orchards of such trees in my hands at different times. Their characteristics are moss-laden crowded branches—some decaying, others dead, yet as a rule having abundant healthy branches thickly set with bloom buds, the centre of the trees a dense thicket, and with many of the outer branches closely overlapping each other, usually decked with a cloud of lovely pink-tipped blossom in spring, followed in favourable seasons

by an abundant crop of fruit, a large proportion of which is, however, very small.

Now let us take the case of a young man fresh from a first-class establishment where only trees of clean growth and model form were to be found, taking charge of such an orchard of old trees. Well may we inquire, What will he do with it? and that too not without anxiety, for has he not been taught that all crowded growth—aye, and crowded fruit too—is wrong? that in order to keep a fruit tree healthy air and light must circulate freely among its branches? If his training has simply made a routine practitioner of him, working strictly by line and rule, his treatment of the trees is pretty certain to be wrong; but if he be a thoughtful man, and has come to recognise the fact that there are exceptions to all rules, and sees, moreover, that one such is before him, he will proceed with caution and prudence, waiting and watching for a season or two, trying simple measures upon a few trees, and so avoiding any very glaring blunder, for the nature and treatment of old trees is not to be mastered in a season or two.

The results of considerable experience teach me that it is wrong to much thin the growth of old Apple trees; that parasitical lichens are not hurtful to the thick old bark; that there is always an ample play of light and air among their branches to promote health, however dense may be the growth; and that the fruit is quite as useful as that of younger trees, although much of it is small. The mode of treatment which is therefore usually followed is simply to cut away all dead branches, to dust some quicklime upon the smaller branches on a damp winter day, and then to leave them alone. Simple enough, is it not, and very different to the energetic measures which one so frequently meets with? Never shall I forget the dismal aspect of a quaint old rectory garden which I once saw after it had undergone the manipulation of a "new hand." What had been picturesque and tolerably productive old trees were shorn of all their beauty and very much of their utility; hacked and trimmed into conventional form, daubed over with a thick coating of whitewash, there they stood in gaunt unsightliness a miserable example of misguided zeal and faulty practice arising from overweening assurance and thoughtlessness.—EDWARD LUCKHURST.

GROS COLMAN GRAPE.

IN your issue of the 23rd ult. you ask for the experience of growers of the above Grape. We have here three Vines of it, all of which have finished-off excellent crops of fruit. The bunches average 4 lbs. weight; the berries are of an immense size, from 4 to 4½ inches in circumference, and as black as sloes. They were quite ripe at the end of September. There are about a dozen bunches still hanging, and the berries are as plump as when first ripe, thus confirming Mr. Tymon's opinion as to its being a late-keeping Grape.

As to quality Mr. Wildsmith's opinion is, that when better known it will prove a formidable rival to Lady Downe's. It requires a strong heat to grow it well, and takes a longer time to colour and ripen than any other Grape I know.—THOS. TURTON, Foreman, The Gardens, Heckfield.

SPENT HOPS FOR MAKING HOTBEDS.—The way I used them was as follows: In any cold pit or frame that might be at liberty I simply placed the hops on the top of any previous hotbed—that is to say, if there was head room enough between the old bed and the glass to add from 12 to 15 inches of hops. They are apt to heat violently if placed too thickly together, and require some watching; but I found them a capital medium for softwooded plants. They are apt to run very close together; and it is a good plan, where there is any old tan which might previously have done duty for hotbeds, to riddle it over and take the small out, the rough to be equally mixed with the hops, and the bed will not heat so violently and will be more lasting than if made of hops alone.—G. R. A.

OUR BORDER FLOWERS—SPIDERWORTS.

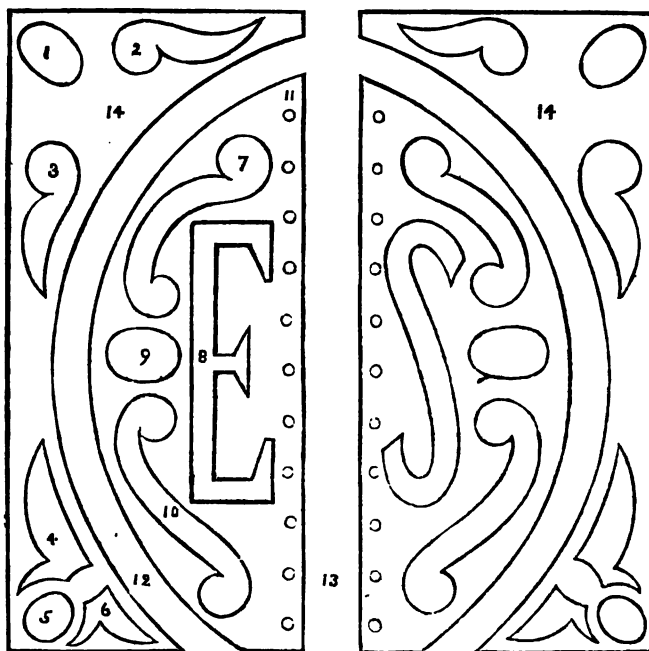
WE wonder why such strange-sounding terms were given to flowers, names which now are seldom used. The family in hand is only a small one, but if small must not be passed by. The Commelynas are dwarf plants of pleasing habit, with a

profusion of lovely blue flowers. *O. coelestis* is said to be from South America. I fail, however, to see any difference between this species and *O. tuberosa*. *O. hirtella* is a very desirable plant and ought to be more frequently cultivated. *O. erecta* and others might be named also as attractive border plants. In height and colour they are of much the same appearance. *O. coelestis alba* is very distinct, and is an acquisition to all collections of hardy plants. To grow them to perfection they must be well cared for. They should have thorough drainage, or their fleshy roots are liable to perish. They like a sheltered but open sunny situation, and should not suffer for want of water. They require a moderately rich free compost; good sandy

amount of care bestowed upon them. They continue in flower for a long time.—*VERITAS*.

THE FLOWER GARDEN AT HARDWICK HALL.

We append a plan of the flower garden at Hardwick Hall which was described last week. In the design the initials of the Countess of Shrewsbury have the same prominence that is given them on many portions of the old mansion. The plan is engraved on a very small scale, but an idea of the extent of the garden is afforded by the carriage drive which traverses the beds; and the brilliant effect of the large sheets of colour



HOUSE

Fig. 2.—PLAN OF FLOWER GARDEN AT HARDWICK HALL.

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| <p>1, Roses.
2, Pelargonium William Thompson, edged with <i>Stachys lanata</i>.
3, Pelargonium Amaranth (very good), edged with <i>Lobelia speciosa</i>.
4, <i>Tagetes signata pumila</i>.
5, Centre, yellow <i>Calceolaria</i>, then a band of <i>Verbena Purple King</i>, edged with <i>Euonymus japonicus variegatus</i>.
6, Centre, Pelargonium Lord Palmerston, enstroled with P. Cloth of Gold edged with <i>Lobelia speciosa</i>, and margined with <i>Echeveria secunda glauca</i>.
7, Centre row Ageratum (blue), next Pelargonium Stella, edged with Golden</p> | <p>8, Scarlet Dahlias.
9, Hollies of different sorts.
10, Centre, Pelargonium Cornair, then a row of P. Bijou, next Belvoir Castle Rose, edged with <i>Cerastium</i>.
11, Standard Roses in the centre of each bed, and filled-in with Pelargoniums light and dark alternately planted.
12, Carriage drive.
13, Flag walk up to front door.
14, Large Cedar trees.
15, Lodge and entrance.</p> |
|---|--|

loam and peat in equal parts, with a little well-decomposed dung, leaf mould, or decayed vegetable matter, and a sprinkling of sandy grit and charcoal dust well mixed together to the depth of 18 inches, will prove a suitable element for them to develop themselves in.

In some situations the plants will stand through our ordinary winters, but it is advisable to protect the crowns from frost and wet by some dry material, or, what is better, to lift them in autumn and store them in sand, but not too dry, in some cool place free from frost. They should be examined during the winter, as they are liable at times to decay. They are readily increased by seed, which should be sown in spring in gentle heat and the seedlings grown on, hardened off, and planted out in May or June; or they may be increased by division when growth has commenced in spring. They are well adapted for pot culture, and when well grown they are ornamental. As border flowers they cannot fail to repay any

may be appreciated by a reference to the mode of planting which was adopted during the past season.

ROSE-GRAFTING ON ROOTS OF THE BRIAR.

SOME prefer for stocks the Manetti, some the Dog Rose, others the Dog Rose seedling; but I prefer the roots of the Dog Rose or Briar. I am surprised that it has not been mentioned before; it has every advantage over all other modes at this season of increasing stock. The old plan either budded or grafted affords but one plant on one stock, but by grafting on the roots you get many stocks to operate on; for if you go to the wood and lift an old Briar you will find it will give you a good many rootstocks. I lift and cut off the roots and put them into a basket of damp moss. If not convenient to operate immediately I put them in damp soil, and graft on a rainy day under cover.

Any strong-growing Rose root will answer, but the Briar is the best. Now is the time to graft and until the second week in March, but the sooner the better. Most of them will bloom the same season if we like to allow them to do so.

When the Duke of Edinburgh first came to me the first week in February I cut off the top, put it on to the Briar root, and in August I had one of the finest blooms I ever had of that variety.

I have just received most of what I consider the best new varieties, and in a few days their tops will be on the Briar roots grafted in the ordinary way and planted in the open ground, covering the union quite over, and the ground covered with 2 or 3 inches of sawdust. Large roots I wedge-graft, small roots I whip. All the Perpetuals will make roots for themselves, and by this plan we seldom see a Briar sucker.—J. C., Felton Park Gardens.

PAPYRUS ANTIQUORUM.

We figure this example of the Sedges as being typical of an ornamental family of plants, and as being remarkable for the important purposes to which it was employed by the Egyptians. It is not only the plant from which the ancients made their paper, but it gave to paper its name. In Syria the plant was known by the name of *babeeer*, whence came the appellation Papyrus.

This plant has been employed for various purposes; its leaves by being twisted were converted into ropes, and from its fibre cloth has been made. The rootstocks when young are sweet and nutritious, and are used as food; but when old they become woody, and are then moulded into cups and other utensils. With the rays of its umbels of flowers the Egyptians made chaplets for the heads

of their gods, and under the arms of a great many mummies a small bunch of the Papyrus is found; and probably it was of this plant that the "ark of bulrushes" was made in which Pharaoh's daughter found the infant Moses.

In its native habitat it grows in marshy ground to the height of 8 feet, and is surmounted by a large compound umbel of flowers, having long filiform involucres, as represented in the engraving. It is an elegant and stately plant, easily cultivated as a stove aquatic, and is increased from seeds or division of the roots.

More particularly is it useful, perhaps, as a subtropical plant for placing on the margins of ornamental water in the summer months, for which purpose, with other species of the same genus, it is well adapted. When so employed these plants produce a distinct and effective feature in garden ornamentation. A few of the species have been appropriately employed in the streamlets at Battersea Park, where nothing seems to be overlooked.

The Cyperuses, which belong to the same natural order, are miniature forms of this family, growing 2 or 3 feet in height. They are amongst the most elegant of table and decorative plants, of the easiest culture, and all of them will flourish in water or in moist places in the garden during the summer. *C. alternifolius*, the Umbrella Sedge of Madagascar, and its variegated form, are the most familiar and useful, although there are a dozen other species equally easy of culture, *C. longus* being hardy. The tropical species require heat, rich soil, and abundance of water during the summer, and may be safely preserved in a temperature of 50°, or even lower, throughout

the winter; but by growing *C. alternifolius variegatus* in a rich compost it is apt to revert to the normal type. It should therefore be grown in sand. Too much water cannot be given to these plants during the growing season; the pots in fact should stand in water. A supply of plants may be quickly raised from seed, and will do something to fill what is now the greatest blank in garden embellishment—streamlet and water decoration.

THE CULTURE OF THE HOLLYHOCK.

THE Hollyhock is the noblest of all florists' flowers. Towering above all its neighbours like a giant, and in almost every shade of colour, we know no other plant that could take its place. What other could give such a bold appearance to mixed borders? Its flowers will also bear a very favourable comparison with most florist flowers, and stands of its cut blooms form very appropriate companions to the Dahlia, not only on the exhibition table, but almost in all positions. In fact the two are so thoroughly united together in my mind that they almost seem inseparable. As back lines to broad flower borders

they are in my opinion unsurpassed, the noble bearing of the Hollyhock adding to the massive beauty of the Dahlia.

It forms no part of my intention in the following notes to trace the history and gradual yet rapid improvement of the Hollyhock by the skill of the florist. It is quite sufficient for my purpose to know it was introduced from China—a very different-looking plant to what we have it at the present day. It will under certain conditions endure the ordinary winters of Britain—a circumstance I never advise, as I consider it quite worthy the shelter of a cold frame during winter, and that is the only protection it requires except in

sharp weather, when a little extra covering is advisable. It belongs to the order Malvaceae, which implies that the plant requires plenty of light and water. In giving my method of successfully growing the plant I will first say that it is my usual practice to have at least the half of my stock young plants every year, believing they, in common with many other plants, produce better individual blooms than do old plants; and by having two sets, old and young, the period of flowering is prolonged, the old coming earlier into bloom than the young plants.

For many years after becoming a grower and ardent admirer of the Hollyhock there was no other mode known to me of increasing the stock except by cuttings of the young shoots, and single eyes, before the stems had become hard in the autumn. With cuttings I found considerable annoyance at times through, I believe, my anxiety to push them too quickly with heat. After a time I had pretty fair success with putting the cuttings into a cold place until they were fairly callused; when introducing them into a little bottom heat they emitted roots immediately. Since grafting became known to me, about fourteen or fifteen years ago, I may say I have alone adopted that mode of propagation. I usually graft early in February. The young shoots that spring from the stems are taken off the same as for cuttings. A slice is taken off the side with a clean sharp knife; a corresponding slice is taken off a piece of root, both fitted nicely together, a small pin being thrust through both to keep them from shifting; then blind with mat, pot in nice friable sandy soil, and plunge in smart bottom heat and shade carefully. In eight days or so



Fig. 8.—PAPYRUS ANTIQUORUM

the grafts will be taken and the pots filled with roots, when more light and air must be given, gradually inuring them to the temperature of the cold frame. The plants will now be ready for a shift into 5 and 6-inch pots, and should never be allowed to receive a check till planting out during the first days of April.

We usually plant in lines 3 feet apart; if in open squares, 4 feet between the rows and 8 feet between the plants. In planting always plant the stake first, and then there is no danger of bruising or breaking the roots; and our practice is to leave the empty pot beside the plant, so that we have a covering at hand in case of frost, but never leave the pots over them when not actually required, nor never allow the plants to suffer for want of moisture. They require an abundance of water in dry weather. Syringe also the foliage on the evenings of fine days, both the upper and under side of the foliage, so that red spider may not gain a footing. As the spikes rise tie securely to the stake and pinch out the side shoots. In some instances when the spikes are extra strong I have pinched the side shoots at the second joint and left them for a time. Thin-out the blooms so that they may not be overcrowded on the spike, and when they begin to show colour place something behind the flower to set them out a little from the spike, and top the spikes at 8 or 9 feet from the ground. Early in June I always give them a good heavy top-dressing of rich manure, and if the weather proves dry at the time giving them also a complete soaking of water. With the aid of the mulching they do not become quickly dry again.

The preparation of the soil is a matter of prime importance, as no after-management can compensate for it if defectively performed. In the autumn I manure heavily and trench deeply. After lying as rough as possible to the action of the weather during winter I again trench it over in spring, knocking it well about and breaking it up. I have grown Hollyhocks on the same piece of ground for years, and instead of finding them deteriorate through such a course, on the contrary have found them improve, through no doubt the ground being so thoroughly wrought and deeply cultivated, which I consider of more importance than anything else in cultivating the Hollyhock to the highest degree of excellence.

I append the names of a few out of my collection that I consider worthy of cultivation, believing they are such varieties as anyone may choose from without fear of disappointment. Brilliant, Circle, Hugh Smith, John Gair, John Cockburn, John Stewart, Jane Wilson, James Dalgleish, Lady H. Campbell, Lady Galloway, Lady Eglington, Lady W. W. Wynne, Lord Stanley, Miss Young, Mrs. James Laing, Mrs. B. B. Todd, Octoroon, Pirate, Queen of Yellows, Regent, R. T. McIntosh, R. G. Ross, Ruby Queen, and Sovereign.—J. B. S.

EUPHORBIA JACQUINIÆFLORA AS A WALL PLANT.

For affording brilliant sprays of flowers set in elegant foliage this favourite winter plant is almost unrivalled. Its straggling habit is not favourable to the formation of handsome specimens, yet with the aid of wire pyramids attractive plants may be produced. Small plants more or less compact may also be had by pinching in the early spring months when the plants are in free growth, but the pinching should not be continued after the month of June. Small plants, however, of rather loose habit are often specially suitable for many decorative purposes, as, for instance, affording a graceful fringe, also for intermixing in an informal manner with groups of fine-foliaged plants. Plants of various sizes should therefore always be grown in pots in numbers suited to the decorative requirements of all gardens which afford conveniences for their cultivation.

There is no better mode of growing small decorative plants than by striking the young shoots very early in spring, inserting them in sand and covering with bellglasses, plunging the pots in a bottom heat of 80° to 90°. When rooted they must be potted-off, and be placed in a very light position in the plant stove. The plants flourish remarkably well when plunged in a dung frame, the temperature at night being kept at 60° to 65°. In the summer months the lights may with advantage be removed entirely during warm nights, when the air and dew will promote their sturdy growth—in fact, they may be given the same treatment that is suitable for Poinsettias. At no time should they be overpotted nor suffer for want of water. The soil should consist of lumpy peat and

loam in equal parts, with a free admixture of charcoal and silver sand.

But not more useful are these plants for decorative purposes than for providing brilliant sprays to be cut for various modes of indoor decoration. When grown for this purpose the plants should be planted out and be trained to pillars and vacant walls of stoves, intermediate houses, or early vineries.

Some years ago I had under my charge an early vinery, the back wall of which was entirely covered with this plant. The house was 80 feet long and the wall 18 feet high, and the quantity of sprays cut from that space may be imagined. The Vines were trained thinly up the roof, yet the back wall was still considerably shaded, but the partial shade only lengthened the flowering parts of the shoots. These were not trained closely to the wall, but were allowed to hang in their own natural manner, simply fastening them back to preserve a clear pathway. Very little pruning was given beyond that of continually cutting the flowers and the stopping of an occasional rampant shoot in the summer. The supply of sprays was almost unlimited, and they were much prized. The vinery, it should be noted, was started on December the 1st. During that and the preceding month the Euphorbias looked starved, but by keeping rather dry they received no real injury: they rapidly recovered their freshness with the increasing heat, and afforded cut blooms for fully three months.

I have attempted the same mode of culture in late vineries, but have failed in succeeding, the resting period in such houses being too long and too cold for the Euphorbia to endure without injury. In any vineries or Peach houses which are started in January the plant might succeed, as it certainly will do in houses that are kept close from the beginning of December.

The sprays of this plant are so useful and are so generally appreciated that a full supply of them is most desirable, and this can best be afforded by plants which are planted out and grown in the way described. A trial of the plan is recommended in temperate houses where the wall space is not too densely shaded.—AN OLD FLORIST.

A FEW HINTS ON PROPAGATING CONIFERS.

EVERYONE who raises Conifers from either home-grown or imported seeds is well aware of the diversity of colour and habit which the seedling plants assume. This is particularly observable in Lawson's Cypress; but Abies, Wellingtonias, Araucarias, and Piceas show the variation in a scarcely less marked degree; and many of the most beautiful forms of Yew, Abies, Cupressus, and Thuja have been originally either natural variations selected from the seed-bed, or sports perpetuated by grafting the variegated branches on a plant of the green or normal form of the species as a stock. Up to the present time, I believe I am right in saying that we have no hybrid Conifers—that is, no garden hybrids raised by artificial fertilisation; for there can be but little doubt that Conifers, being mostly gregarious and furnished with such ample supplies of easily-wafted pollen, are often cross-fertilised or even hybridised in a state of nature: and another point in favour of this cross-fertilising process having long taken place is, that imported seeds produce such a diversity of offspring. There appears to be no valid reason why we should not raise hybrid Conifers in our gardens now that we have so many fertile or cone-bearing specimens of the rarer and more beautiful kinds; and I strongly urge those who have the opportunity to make experiments in this direction. By crossing the more beautiful and tender kinds with hardier species we might obtain a hardier race, and if additional beauty of leafage or habit, so much the better. Again, some rare Conifers produce ample supplies of pollen before they bear fertile cones, and by using this pollen to fertilise older cone-bearing trees belonging to the same or an allied genus good results might be obtained. No matter, however, whether success or failure is the result, the careful artificial fecundation and cross-fertilisation or hybridisation of Conifers is well worth attention from cultivators, as it appears to be as yet an untrodden path to horticulturists.

The Fir trees belong to a well-known family of graceful-habited Conifers very valuable in ornamental or landscape gardening, and useful as timber trees, and as the source of turpentine in all its forms. This genus (Abies) now includes the Lebanon, Himalayan, and Algerian Cedars (Cedrus). The fully matured cones should be gathered during the winter season, and exposed either to sun heat or to the gentle warmth of an oven or kiln, this treatment being requisite in order to

readily separate the seeds from the cones. The Firs give out their seeds very easily and quickly—much more readily than in the case of the Cluster and Stone Pines, which require the gentle application of heat for several weeks, or even months, ere their seeds can be separated from the close-sealed cones. The method of extracting the seeds from Cedar and other Conifer cones by splitting is tedious, and often injurious to the seeds. M. Delépine of Angers states that the plan he adopts is much simpler and better. About February the cones are buried at a depth of 2 feet underground in sand; they remain thus for a month or two, after which the cones scale easily without force, and the seeds are then picked out and sown immediately, and being swelled they germinate at once. In the case of all Conifers seeds undoubtedly afford the best mode of reproduction whenever they can be obtained; but in the case of rare and new varieties grafting and cuttings have perforce to be resorted to as auxiliary, and in some cases the quicker modes. The cones of Cedars are very resinous when newly gathered, and ought to be left a year before the seeds are separated, much of the resin having during that period passed away by evaporation. The following experiments on the germination of Conifer seeds were made by Mr. J. Alexander, and are recorded in the "Transactions of the Scottish Arboricultural Society:"—"In the year 1870 twenty cones were gathered from each of ten different trees, whose ages were approximately ascertained by counting the concentric circles in other trees felled beside them. The cones were carefully opened, and all the seeds of the ten different sorts sown in separate beds, when the following was the result:—

The seeds of twenty cones from a tree

800 years old	produced	10 plants.	100 years old	produced	100 plants.
250	"	18	50	"	104
200	"	50	15	"	46
150	"	74	10	"	40
125	"	106	"	"	"

The same experiment was again tried in 1871 with other trees, when the result was much the same as in 1870.

In a paper on "Gathering the Cones of Resinous Trees," printed in the *Gardener's Chronicle*, 1873, 1557, Mr. Ellison maintains, by illustrative examples, that the premature gathering of the seed tends to weakness in the plants. Foreign seed, he remarks, from the native forests, is invaluable when imported in fresh-gathered cones secured from the trees at the conclusion of the alpine winter, but is not worth having if they have been gathered prematurely. Curiously enough, other seeds have been found to be much improved if left on the plants all winter; and this is notably the case with stock seed.

The latter end of March if mild, or the beginning of April, is the best time to sow all Conifer seeds; and it is an excellent plan to place the seeds in a bag and soak the bag in water for a day or two, taking care to dry the seeds in the sun before sowing. The rarer sorts are generally sown in pots, pans, or boxes of rich earth, and the protection of a pit or frame is given them until they have advanced in growth sufficient to be pricked out in lines in the nursery beds. The more common and hardier kinds are, however, sown at once in nursery or seed beds a yard or 4 feet in width. The richer and more friable the soil the better, and the depth at which the drills should be drawn must be regulated by the size of the seeds, say from half an inch to 1 inch, which, in the case of the larger and stronger kinds, will be amply sufficient. If these seed beds are sheltered by hedges of Yew, Juniper, Privet, or Beech, so much the better. The seedlings may be lifted about a year after they are sown, or in the April following, and pricked out in lines 6 or 8 inches apart, leaving a space of about an inch between each seedling plant; and plants so treated will be found to have made considerably more progress than those left thickly in the seed beds for two years, an old-fashioned plan still largely practised. As a rule seedling Conifers should be lifted every year they are in the seed beds, or until they are either sold or planted out in permanent positions either in the woods or pleasure grounds. If seeds are not obtainable the next best mode of propagating Conifers generally is by cuttings, which should be selected from the side shoots when the sap is in full motion. They should consist of last-year's-growth branchlets, say 4 to 6 inches in length, with a heel of the old wood, which causes them to root better. *Betula nana*, *Taxus*, *Thuja*, *Juniperus*, *Wellingtonias*, *Cedrus*, *Cephalotaxus*, *Cryptomeria*, *Dacrydium*, *Podocarpus*, *Cypripis*, *Libocedrus*, *Torreya*, and many other well-known Conifers, are readily multiplied by cuttings like those already described. The usual practice is to insert the cuttings or slips in pots,

pans, or boxes of light sandy compost, and place them in a cool and shady frame at the back of a north wall or with a northern aspect. The more tender species and varieties, however, strike quicker and with more certainty if pricked into pots of small crocks, having about an inch of sandy soil at the top. These, if placed in a genial heat of 75° to 80°, will have emitted clusters of white fibrous roots in about a fortnight or three weeks; but they must be carefully hardened off and potted singly, after which they may be placed in a cold frame and finally planted out in the ordinary way. Seed is undoubtedly the best method of propagating all Conifers when it is obtainable, and cuttings are better, as a rule, than grafted specimens, as the latter often throw out lateral leaders instead of terminal or erect ones, and these spoil the symmetry of the specimen. Where the central leaders of Conifers do not start away freely the lateral branches, especially those which grow faster than their neighbours, should be shortened in about October. This throws fresh vigour into the leader and preserves the symmetry of the tree. Many propagators who bud Roses or graft fruit trees with every success finish at operating on Conifers, and this without any apparent reason, except that the plants are a little different in appearance, and this mode of propagation is but rarely resorted to except in trade collections. All Conifers, if not too resinous, may be grafted as easily as a Plum or a Pear. Scions or grafts are selected from the last summer's growth, and are grafted on stocks of the same or nearly allied species all through the winter months in a genial heat, the stocks being seedlings or cuttings grown in small pots for the purpose. Terminal grafting is practised in the spring, taking the scions from the tips of the main branches when in an herbaceous state. The scions may be 1½ to 2 inches in length, and should be inserted on the apex of a seedling or rooted cutting of an allied hardier or less valuable species as a stock. This operation is best performed in a heated close case, or if in the open beds cloches must be used. If in the open air, however, the operation must be deferred until the sap commences to move in the spring. Nearly all the species and varieties of *Picea* and *Pinus* are best propagated from grafts when seeds are not to be had. The Silver Fir, *Abies* (*Picea*) *pectinata*, is an excellent stock for all the finer varieties. The numerous species of *Pinus* grow well on stocks of the different types which they most nearly resemble. For example, those species and varieties which resemble the common Scotch Pine (*Pinus sylvestris*) grow well on that species as a stock, while *P. monticola* or *P. Lambertiana* and their allies do better on *P. excelsa* or on the Weymouth Pine (*P. strobus*). *Cupressus Lawsoniana*, which is readily propagated from seed, and is of clean habit, forms an excellent stock for the dwarf, dense, or variegated form of Lawson's Cypress. Nearly all the *Abies* or Firs take kindly to the common Spruce as a stock, while *Biotas* and *Thujas*, as a rule, succeed well on the Chinese Arbor Vitae. In the *Revue Horticole*, 1867, M. Briot states that *Libocedrus tetragona* succeeds as a scion on *Saxegothaea*, and its habit, in consequence, becomes changed into a wide-spreading head instead of forming a narrow cylindrical column. *Chamaecyparis obtusa pygmaea* grafted on *C. Bourcierii* grows erect, while if worked on *Biota* or *Thuja*, or if propagated from cuttings, the plants spread horizontally on the ground. *Pseudolarix Kämpferi* is best propagated by grafting scions on its own roots, moderately thick pieces well furnished with fibres giving the best results. This mode might be used with advantage in the case of other rare Conifers which are difficult to propagate by cuttings. Grafting is largely practised in most of the trade collections of Conifers, especially for the multiplication of variegated or distinct varieties of any species. Some cultivators object to grafted specimens of Conifers; but while acknowledging seedlings to be preferable as a rule, one cannot gainsay the evidence afforded by the fine grafted specimens worked by Mr. Fowler at Castle Kennedy, and other well-known cultivators of these fine ornamental plants and trees.—F. W. B. (in *Gardener*).

THE MILE ASH NURSERIES, DERBY.

In horticultural circles the name of Cooling is very familiar and favoured. This applies not to the Cooling of Derby only, but also to the Cooling of Bath. At either town the gardener happening to have a temporary sojourn he would not be likely to omit a visit to their nurseries. I was in the midland town, and without any reference to the alliterative jingle of Cooling and Cucumbers I visited the establishment, and, like any other "customer," I met with

"prompt attention," and once more found what I had often found before, and what "D., Deal," refers to in his happy "Greetings," that the *Journal of Horticulture* ticket is a "sufficient passport in horticultural circles." 18, Irongate, is Mr. Cooling's seed shop, which I found filled to repletion, and undoubtedly doing a "good business," and faced by the

"finest church tower in England"—so say, at least, the loyal people of Derby.

But to the nurseries. These are on an eminence a mile from and overlooking the town. They are exposed to all the winds that blow, and the "stock" is not only exposed to strong winds, but is established in strong soil—clay. A soil



Fig. 4.—Cooling's DERBYSHIRE HEMLOCK NURSERIES.—(From a Photograph.)

of this nature is shunned by many as being expensive to "work," but it has its advantages, which are here turned to account. In light soil the difficulty is to secure the coveted "balls of earth" to the roots of certain trees and shrubs when being removed; but here the difficulty is the other way. Mr. Cooling, therefore, wisely made it a point in his business to grow largely of ornamental evergreens of a size required for immediate effect, knowing that in this tenacious soil they would remove safely in consequence of the "large balls of earth" that could not fail to adhere to the roots.

These perfected Conifers are a special feature in this nursery;

they are in great demand, and the stock is remarkably fine. Wellingtonias, Cupressuses, Thujas, Piceas, Cedars, &c., are numerous and handsome, the specimens having ample room to develop their forms and preserve their hardihood. In this strong soil also the feathery Retinosporas flourish admirably, as do Rhododendrons, Cephalotaxes, and Cryptomerias.

I mention this because many are deterred from planting these beautiful evergreens in consequence of not having peat or vegetable soil. With care in removal and a little generous soil placed round their roots to start them, nearly all evergreens will flourish in soil of a clayey nature, and in which

they generally assume a healthy hue, and are invariably more hardy than when grown in a lighter compost. Of the commoner shrubs in this soil I need only say that they are as hardy and healthy as such shrubs can be grown.

The Roses are another feature of these nurseries. These are grown in immense numbers, and, as may be imagined from the nature of the soil, in great luxuriance. The theory was once fashionable that Roses of exuberant growth are tender; but practice has disproved the fallacy of that dictum, strong plants raised in strong soil having passed the winters more safely than weaker, and apparently hardier, plants in light soil. Why this should be so has not been satisfactorily demonstrated, yet many have noticed that a gross and seemingly tender shoot has frequently been the only part escaping injury, the smaller and harder-looking portions of the plant being killed; and even if the gross shoot has been injured it has been stricken at its base more often than at its extremity, to the no small surprise of its owner.

Mr. Cooling has a most rich collection of Roses, purchasing every new variety, but increasing only those of merit and in popular demand. They are worked on the Briar and Manetti stocks, the latter being planted more thinly than one often finds them, and the union of the buds with the stocks is proportionally more complete, and the lower buds prominent.

Besides the grounds, which comprise about twelve acres, there are several glass structures devoted to decorative stove and greenhouse plants in the winter and spring, and many of them to Cucumber culture in the summer. Most of these are span-roofed houses, one block containing ten, each 40 feet long by 10 to 15 feet wide. These do not stand separately, but are arranged in triplets, so that three houses have only two external walls, whereas, if isolated, the three would be exposed on six sides. Their union is to economise heat and save fuel. Lead gutters, of course, are formed from roof to roof to conduct away the water.

The plant houses are staged in the centre and round the sides, those which are devoted to Cucumbers in the summer having simply a path down the centre and beds on each side, as shown in the engraving.

It is not necessary to enumerate the contents of each house. The plants generally comprise Palms, Ferns, Jasmines, Bonvardias, Solanums, Ardisias, Pelargoniums, double Primulas (a splendid stock), Lachenalias, a few Orchids, Camellias, and Azaleas very numerous and healthy, and numerous other plants which are adapted for decorative purposes and to meet the great demand for cut flowers, to supply which Pelargonium eckinatum is in great favour for bouquets. Mignonette is also grown in pots extensively and well, and one of the frames contained a splendid stock of *Myosotis asorica*, var. *Empress Elizabeth*. This Mr. Cooling considers one of the most valuable of spring decorative plants, its dense masses of rich blue being strikingly effective. The plants are divided in the spring, and are potted-on and grown much after the manner of Cinerarias. It is one of the indispensable plants in these nurseries, and when in bloom is sold off rapidly.

The Chrysanthemums were fine at the time of my visit, but they are only mentioned to note two useful Pompons, one *L'Escarbouche*, a yellow gem; the other, which is believed to be a sport from *Madame Roussillon*, I will call Cooling's White Button. It is the only variety that is coveted in bouquets, for which purpose it is extensively employed; it is chaste, compact, and pure.

There are other large houses devoted to plants, but on these I cannot profitably dwell; more useful will be a few remarks on the Cucumbers, and especially as the period is approaching when preparations must be made in all gardens for this important crop.

Mr. Cooling is one of the most extensive growers of Cucumber seed in the kingdom. He annually raises large crops of fruit, giving to these crops personal attention, their watering, dressing, &c., being done with his own hands: Cucumber-growing is, in fact, his "hobby" and recreation—a "hobby" the more pleasant by being profitable. The houses are admirably adapted for their purpose, being light, yet having no undue exposure. They are heated by an ample provision of hot-water pipes, which, however, are not seen, the whole being placed beneath the beds, the heat escaping through a series of pigeon holes, as shown in the accompanying illustration. Top and bottom heat is thus afforded by the same pipes, which are placed about 8 feet below the soil to prevent any overheating of the roots.

What strikes the visitor the most forcibly in these houses

are the exceedingly shallow beds or soil-bins in which the plants are grown. In the front next the path these are not more than 4 or 5 inches deep, the soil sloping to the back or boundary wall, where it is about a foot deep. Thus the average depth of soil in the beds is not more than 8 or 9 inches. Mr. Cooling's object is to produce a short-jointed growth, medium-sized stout foliage, and numerous and highly perfected fruits. These requirements he can best attain by shallow soil and very frequent top-dressings; deep rich soil producing larger foliage, longer-jointed stems, and fewer fruits.

The plants are started in small hillocks of pure loam, and a proper (not high) temperature is provided to secure a steady sturdy growth. As their roots protrude through the surface of the soil they are covered with thin layers of fresh soil. When the crop is set richer top-dressings are given, and when the fruit is swelling the plants have copious supplies of liquid manure. To frequent application of fresh soil in, say, 2-inch layers, increasing its richness with the increasing requirements of the plants, and liberal supplies of water, Mr. Cooling attributes his admitted success as a Cucumber grower. Too often do Cucumbers receive just the reverse of this treatment, deep rich soil being given in their early stages, fostering an exuberant growth, and then in their after stages when the crop is crying for support, the only response is an impoverished larder. Only a moment's thought is required to determine which mode of practice is right.

Once, and once only, was Mr. Cooling overtaken with what he regarded as the "Cucumber disease." The crop was swelling to maturity when suddenly the tips of the shoots drooped, the foliage became flaccid, and the stems of the plants ulcerated. Everything that experience could do was done to save the crop, but the disease refused to yield, and the case was regarded as hopeless. As a last resource, however, and applied without hope, an extra application—a strong "kill or cure" dose of Amies' chemical manure was given. The soil was thickly sprinkled and the wounds were thoroughly dressed with it. The effect was magical; the manure acted the part of healer and purifier of the festered stems, and afforded a stimulant to the roots, and the result was that the crop which was given up for lost yielded the best return of seed ever had before or since; the check which the plants received no doubt accelerating the seeding of the fruits. So hopeless was the case, and so complete the restoration, that Mr. Cooling desires that the means he applied may be made known for the benefit of others.

As may be expected not many varieties of Cucumbers are grown here. A few of the best sorts, and these in large quantities and in separate houses, is the system adopted to secure purity of seed.

Judging by the requirements of the trade, Telegraph is the most popular Cucumber of the day. Derbyshire Hero is also justly popular, and is only superseded, perhaps, by Tender and True, and Mr. Cooling's new introduction King of the Cucumbers. This is the result of a cross between Telegraph and Long Gun (the same parentage as the Osmaston Manor Cucumber now being sent out by Mr. B. S. Williams). The "King" is as productive as Derbyshire Hero, light green in colour, of perfect shape, and high quality.

It should be noted in reference to the engraving that the photograph was taken when the fruits were approaching ripeness, and when they are often double their proper table size; also only those were left on the plants which were likely to contain seed, the straight seedless fruit having been cut for use.

In conclusion I may say that not more enjoyable is a visit to these good country nurseries than is an hour's instructive converse with a gentleman of Mr. Cooling's great experience, and his intelligent son and assistant Mr. Edwin Cooling.—J. W.

NOTES ON VILLA AND SUBURBAN GARDENING.

DURING the present open weather an extra effort should be made to complete all digging and trenching in the kitchen garden; but first of all, where the fruit trees are planted by the sides of the walks instead of in regular quarters, the pruning and training necessary should be done; this will leave all neat, and the soil can lay without interruption for some time, which will be an advantage to it; whereas treading the soil in a wet state after being turned up renders it very unkindly, even if it dries up again immediately afterwards.

Plant Garlic and Shallots on a border of good soil, or if only a few are grown they may be planted in a row by the side of the walks, the bulbs being placed 6 inches apart. Make a sowing of early Peas on a border of well-prepared ground. I sowed six early sorts last year, all sown at one time; they were Kentish

Invicta, Laxton's No. 1, Emerald Gem, Sutton's Ringleader, Sangster's No. 1, and Laxton's William I. The first-named sort, with Emerald Gem and Sangster's, came into bloom at one time, followed in three or four days by Ringleader and William I. Laxton's No. 1 had not a fair trial, for it was eaten very much by sparrows and pea-fowls, which we have constantly to do battle against here. Invicta and Emerald Gem were ready first, next came Ringleader, and Sangster's a few days later, and William I. and Laxton's No. 1 last. As a summer Pea for good cropping and other qualifications William's Emperor of the Marrows is to be recommended; Giant Emerald Marrow also turned out well. G. F. Wilson is a first-rate Pea; and as dwarf summer Peas there are few to equal Veitch's Perfection and Yorkshire Hero (Dixon's), both of which I always grow. I found that Ringleader, Laxton's No. 1, and William I., though not quite so early as the others, were the best croppers; they make more haulm and have a more vigorous constitution: therefore those who do not make a point of earliness will not be disappointed by growing either of those last named. I shall grow similar sorts again this year. Beans of the Early Masagan kind should now be planted, if not done before; they will do in a heavier soil than will Peas.

The stock of bedding plants must be seen to now. Amateur gardeners about here are complaining about so many plants damping-off. No doubt their having been placed in common frames during the late snow was the origin of the decay of the plants; but lately there has been ample opportunity to clear them of all dead leaves and otherwise keeping them clean, for if one mildewed leaf is allowed to remain long it is pretty sure to cause the decay of others, especially among the variegated class of Pelargoniums. Fresh air and plenty of it when the glass outdoors approaches 40° is the principal remedy for all damp-affected plants. Old plants of the bedding class that are stored away thickly ought to be looked over and have the dead and dying parts severed from the rest, or they, too, will suffer. If room can be found in the greenhouse the most delicate of them should be taken in. All other store plants, especially Cannas, Dahlias, Marvel of Peru, Fuchsia fulgens, Salvia patens, and such others as have been laid up in earth should be examined, and if any are rotting, which they sometimes do, the decayed part should be cut away, and very dry sand or fine earth should be used to arrest farther injury of the roots. Calceolarias and other half-hardy plants in frames must be treated liberally with air, and in fact, now that all are well rooted, the lights may be thrown quite off all day. Carnations in pots ought to be fully exposed in mild weather, and the frame in which they are placed ought to be hoisted upon bricks so as to admit air beneath the plants.

In the little forcing houses, too, things will begin to move, but for the present—say for another fortnight—the temperature should be kept rather low than otherwise, so as not to excite the buds too much into growth until there is increased light and sun to perfect it. Take care that the house is kept moist enough according to the heat applied, and the plants kept damp overhead. Lillacs, Deutzias, Fuchsias, Hyacinths, Tulips, &c., do not require a strong heat to bring them into bloom, but they require that happy medium of heat and moisture which is so conducive to good health among these plants. By a steady temperature the plants will come into bloom more slowly than under greater heat, but then they will be the better for it and last much longer. Look daily after green fly among Roses and the young foliage of the Strawberries, and for thrips upon Azaleas, and fumigate at once; it is as well to do this once every week as a preventive. Take care that the foliage is dry before applying the smoke, and do not give it too strong, or it will do harm instead of good.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

PRUNING fruit trees, especially standards, pyramids, or bushes, is as much an art that must be perfected by experience as is pruning Rose bushes. The Rose-pruner must know whether his Rose is a weak or a strong grower, whether it is a free or a shy flowering sort, Tea or Hybrid Perpetual, &c. The experienced fruit cultivator prunes for a purpose always, and not by chance. He knows whether the trees are likely to produce a large proportion of young wood, or whether there will be too many fruitful spurs. In the latter case the tree may make such a small proportion of young wood that its constitution might suffer, and it will be necessary to thin out the branches to promote the growth of young wood. Overluxuriant trees must not be pruned closely, and, if not already done, a semicircle should be drawn round the tree according to its size. If the tree is large the radius must be at a considerable distance from the stem. We then dig down to the principal roots and cut them off; then we work under them to the tree, raising all the roots near the surface; the other half of the roots are pruned the following season. This work is best done in November, but it might

be done up to February with advantage. This system of root-pruning is the only certain cure we know for canker if it is done when the tree is first attacked. The branches of standard trees very often become overcrowded from neglect, and those of the bush and pyramid form from injudicious pinching or summer pruning. The fruit produced on such trees is never of good quality, and is always smaller than that produced on trees where the branches have been thinned out to allow the centre of the tree to be pervious to the light. Our trees have been pruned—at least, what little pruning was required; most of it was done in summer. The ground over the roots has been dressed with rotted manure.

The ground between the rows of Raspberry plants has also been dressed with rich manure, and this will be dug-in at once. Many persons disapprove of digging between the rows, but we have always done so, and our crops are very good. There are certain objections to mulching over the roots of trees and bushes, especially those near the gravel walks, that cannot be disregarded. The mulching always has a literary appearance, and this is the most noticeable at the time when the garden is expected to look at its best—that is, from the end of March onwards; the small birds also are much pleased to scratch the manure, after it has become light from exposure, on to the gravel. Taking these things into consideration it is evident, if we can obtain a crop from trees and bushes almost if not quite as good when the manure has been forked-in as when it is left to litter about on the surface, it is very much better to do so. The pruning of all small fruits has been finished, such as Gooseberries, Currants, &c. All of them receive, like the Raspberries, a good dressing of rich manure. We rather fancy that Gooseberries and Black Currants do better when the ground underneath them has been forked over, plenty of manure being added of course.

We look over the Apples and Pears in the fruit room about once a-week. Both sorts of fruit are keeping very well now. The late Pears have kept better than usual, but the flavour is not nearly so rich as it has been in some previous seasons. We are now using Passe Colmar, Easter Beurré, Josephine de Malines, Winter Nellis, and Chaumontel Pears, the last-named sort from orchard house trees. This is by far the best; except Easter Beurré, which was grown on a south wall, the other three sorts were from pyramid trees. Strange to say the Easter Beurrés are gritty, and in comparison are the worst as regards flavour. The French and Jersey growers are very successful with Easter Beurré from walls. Our experience is that it does not do well on a wall. Many growers, and amongst them the veteran Mr. Thomas Rivers, say it produces the best-flavoured fruit from bush or pyramid trees.

FRUIT AND FORCING HOUSES.

Vineries.—In the early houses where the buds are just breaking we are keeping up a good supply of atmospheric moisture from fermenting material, supplementing this by evaporating troughs over the hot-water pipes, and water sprinkled over the paths and surface of the borders. Red spider seldom appears in houses where a quantity of ammonia is being thrown off daily from stable manure. When the buds are well started and the Vines tied up in their places the borders outside and inside will have a good watering; each time of watering as much is applied as will correspond to a depth of rainfall of 2 inches; we might give more than this, but do not reckon to give less. After the Vines are started no fresh manure should be taken into the house, as the steam from this even in a moderate quantity is injurious. In late vineries the Grapes hanging are Mrs. Pince's Black Muscat, Muscat of Alexandria, Gros Guillaume, Lady Downe's, Royal Vineyard, Waltham Cross, Black Hamburg, and Snow's Muscat Hamburg. Of these Lady Downe's keeps the best, but for keeping qualities Gros Guillaume is but little behind it, and is a far more noble-looking fruit. Mrs. Pince has not kept well, and the fruit shrivels much more than any of the other sorts. The keeping qualities of Waltham Cross and Muscat of Alexandria are about equal, both of them keeping better than Royal Vineyard. Of course any decaying berries are removed at once with a pair of sharp-pointed scissors.

Dwarf Kidney Beans.—We do not require to grow these this season, and are truly thankful; they are almost invariably the means of introducing that terrible pest red spider to the houses. Those who intend to grow them should now sow the seed. After trying different modes of treatment the best was thought to be that of planting about six Beans in a 7-inch pot. The compost used was good turfy loam four parts and one part of rotted manure. The pots were not quite half full of mould when the seeds were sown, but as soon as the first true leaves were formed the pots were filled up with soil. If the plants can be kept in a growing temperature and free from spider, and the pods be gathered as soon as they are ready, they will continue to supply gatherings for many weeks. The pots should be placed on a stage or shelf near the glass in a temperature of 60° or 65°, and be daily syringed.

Figs in Pots.—These are usually repotted about the time the leaves fall, but as the operation was omitted at that time it

will be done this week. The Fig is a gross feeder. The compost most suitable for it is good turfy loam, with a fifth part of rotted manure and crushed bones, a good handful of the latter to every peck of the compost. We do not find the trees grow too strongly in pots with such rich compost; if they were planted out it would be different. The compost would then be turfy loam without any manure except what would be applied by surface-dressing after the plants were established.

GREENHOUSE AND CONSERVATORY.

The Camellias are now furnishing us with a few flowers. Last year the same plants were not in flower until the end of February, but as soon as the flowering period was over the plants were placed in ainery where the night temperature was from 65° to 70°. They were freely syringed twice a-day, keeping a moist atmosphere. The result was a splendid growth, with large healthy foliage and plenty of flower buds. We have discontinued turning the plants out of doors after the buds are set. They are removed from the vinery to the greenhouse, the latter being kept rather closer if the weather is cold, but it is not usually so at that time. There is great variety of colour and formation of flowers amongst Camellias, but the very old sorts are not quite eclipsed by the recent candidates for popular favour. The old Double White and Fimbriata are still the best whites, and Imbricata is still one of the best red sorts; they are also profuse bloomers.

Cinerarias now require attention. If the pots are filled with roots, and the growth of the plants is not too vigorous, every alternate watering should be with weak liquid manure. The plants intended to flower in March and April, if handsome specimens are intended, must now have the flowering growths tied down, as the more dwarf the plants can be grown the better. A good plan is to fasten a wire or a piece of stout rope yarn under the rim of the pot, and with the aid of a few sticks inserted in the pot the flowering growths can be tied into their places. Tying and training *Dentata gracilis*. This is a plant that should be grown in every garden. The plant is quite hardy, but to be quite successful with it it must be treated as a greenhouse plant, except that it can be wintered in a house without artificial heat. Some cuttings and suckers from the roots have also been potted. The pots are placed in a cool frame at present, in a week or two they will have the advantage of a little bottom heat. Small bushy little plants in 4 or 5-inch pots, covered with their snow-white flowers, are objects of extreme beauty. The cuttings and suckers put in now will, with good management, form nice plants next season. *Fuchsias* have been placed in a little heat, and when the growths have started a few inches, cuttings of them will be put in. Early-struck cuttings of this graceful old plant are very useful for making a display in the greenhouse in the months of July, August, and September. With *Fuchsias* and a supply of the best sorts of zonal *Pelargoniums* there will be no lack of flowers for those months.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

WESTMINSTER AQUARIUM. April 12th and 18th, May 10th and 11th, May 20th and 21st, July 5th and 6th, October 4th and 5th.

MAIDSTONE (ROSES). June 21st. Mr. Hubert Bensted, Rockstow, Maidstone, Sec.

SPALDING. June 21st. Mr. G. Kingston, Sec.

SOUTPORT. July 6th, 7th, and 8th. Mr. E. Martin, Sec.

HEMELSTEDT (ROSES). July 12th and 18th. Mr. J. Mitchell, Sec.

DUNDRE (INTERNATIONAL). September 7th, 8th, and 9th. Mr. W. B. McKelvie, 26, Euclid Crescent, Sec.

TRADE CATALOGUES RECEIVED.

Waite, Burnell, Huggins, & Co., 79, Southwark Street, London, S.E.—*Wholesale Price Current of Seeds, &c.*

J. C. Wheeler & Sons, Gloucester and London.—*"Little Book" of Seeds. Illustrated.*

J. & F. Howard, Britannia Iron Works, Bedford.—*Illustrated Catalogue of Implements.*

Robertson & Galloway, 157, Ingram Street, Glasgow.—*Descriptive Seed Catalogue and Amateurs' Guide.*

Hooper & Co., Covent Garden, London.—*Gardening Guide and General Catalogue.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee sub-

jects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOK (Bacup).—The work containing woodcuts of plants generally is Loudon's "Encyclopedia of Plants." We cannot read the name of the plant that sheds its leaves.

TENANT REMOVING A GREENHOUSE (Nurseryman).—It is always preferable to obtain the landlord's written permission to remove any greenhouse or other building you wish to erect. If he refuses to give such permission it is easy so to erect them that you can remove them without his leave. If the foundation is of brick, have a plate of wood fixed to it, and to that plate have the superstructure attached by screws. The whole superstructure may be then removed. The boiler, pipes, &c., may be removed also.

EVERGREENS UNDER TREES (S.).—There is often great difficulty in getting shrubs to grow in the shade of large deciduous trees from the ground being occupied with their roots, and which speedily spread into the loosened soil made by planting the shrubs, making the soil too dry for the safe establishment of the evergreens. *Laurustinus* and *Rhododendrons* do well under trees, also *Aucubas* and *Hollies*. Common Laurels and Yews are good, as is also *Evergreen Privet*, *Portugal Laurel* growing for the most part weak and leggy. We should face next the turf with *Berberis Darwini*, then *Laurustinus*, as they will bear any amount of cutting-back which may be required, backing the *Berberis* and *Laurustinus* with *Rhododendrons*, completing with common Laurel, *Evergreen Privet*, Holly, and Yew. Promiscuous planting is for such places far preferable to any formal arrangement of the shrubs, and mixed planting we should adhere to except for the front lines, and in these uniformity in height and outline is often desirable.

BERRIES ON BUTCHERS' BROOM (Idem).—We do not know of any method to promote them other than by fertilising the flowers, or gently shaking the bushes, which would cause the distribution of the pollen. The plants will shortly be in a fit state for operating upon.

DESTROYING GRUBS (A. T.).—Gas lime is good against most descriptions of grubs that prey upon the roots of vegetable crops. It may be applied now or in March prior to planting or sowing, spreading it evenly over the surface, and at the rate of twenty bushels per acre, and point-in with a fork. For your quarter acre you will require five bushels, and the ground being vacant apply now. Gas lime is preferable to ordinary lime to use against grubs, but that is also good, and that you may apply if there be an objection to the gas lime during March, at the rate of twenty to thirty bushels per quarter acre. The greater quantity is not too much.

WINTERING COLEUSES (H. B.).—They winter best when under rather than overpotted, and kept moderately moist in a night temperature of about 55°, and 80° to 66° by day. We should defer repotting them, unless the plants are in very small pots, until February. They do well in turfy loam with a third of leaf soil added.

RAINING MUSK FROM SEED (Idem).—Sow the seed in February in gentle heat, and again early in March, keeping near the glass, the soil being kept moist, and a moist atmosphere maintained.

APRICOT TREES DROAVING (A Constant Reader).—The most likely cause is the high and bleak exposure to which the trees are subjected. A coping board would be a great assistance when the fruit is ripening, also for protecting the young tender fruit in spring and early summer. You will not, we fear, find the trees covered with glass as you propose answer so well as Peach trees, though they would afford earlier and better-ripened fruit under glass than against an unprotected wall. It would have suited better to have had the Peach trees against the wall in place of the Apricot trees, with a clear space of 4 feet from the wall, so as to admit light to the base of the trees. Nothing is gained by crowding, and we advise the Peach trees you have in front to be thin rather than crowded, and with two rows of trees you will in a few years have trees that will crowd each other or encroach upon the trees on the wall, which, as before stated, must have light, and the other trees also, or they will become bare at their bases, unsightly, and unproductive.

BOUGAINVILLEA SPECIOSA NOT FLOWERING (Idem).—It usually grows very freely, but will not flower at all freely. Water copiously up to August, and after the beginning of that month keep dry, not giving any water unless the foliage flags, and then only enough to recover its freshness, affording unobstructed light. It may probably show for bloom in winter or spring, when, of course, free watering should be resumed. Prune as little as possible, which only tends to growth, merely thinning the shoots to prevent overcrowding.

MULCHING PEAR TREES (Henry F. F.).—You may now apply the mould soaked with urine as a mulch or top-dressing to the Pear trees as far as the roots extend, but we should not put on a greater thickness than an inch. This is not the best time to apply guano, but you may apply the fowls' dung to the flower and vegetable garden now, applying to the surface, and rather thinly, as it is a powerful manure, and point-in with a fork. Fowls' dung being like guano, rich in ammonia, is highly stimulating, but is soon exhausted, hence neither should be used any length of time previous to the putting-in of the crops, its value as a manure being thereby greatly diminished, especially in light soil. Liquid manure made of guano kept in a tank will be constantly giving off ammonia, and ought so soon as it is dissolved to be applied to the purpose it is intended for; but we cannot say how long it would retain its value as a fertiliser in a liquid state, but would be more or less subject to daily loss from evaporation.

GOOSEBERRY BUSHES DISEASED (T. W.).—There is no disease on the sprigs sent that can be cured by dressing the bushes with any mixture. The soil is either poor or undrained. The Gooseberry bush delights in deep moderately rich soil.

PEACH TREES ON BACK WALL OF VINERY (W. K. F.).—We do not advise you to plant trees in the position you name. Peach trees do not succeed well under Vines at any season; but starting the house in November it would be proportionally difficult to manage the Peaches successfully.

PEAS FOR SUCCESSION (Newo).—For a large supply of inexpensive kinds, growing about 8 feet high, we recommend Dillstone's Early, Princess Royal, Velch's Perfection, and Hair's Dwarf Mammoth. Late Peas are all comparatively dear, but a given quantity of seed will sow a greater length than the same quantity of early Peas. Thus, if a pint of early Peas will sow a row 60 feet, a pint of late Peas will sow one 80 feet in length. Sow a large breadth of Dillstone's now, and when these appear above ground sow a similar breadth of the same sort, and also on the same day a like breadth of

Princess Royal. Follow with Princess Royal at suitable intervals throughout March and April, making two sowings of Veitch's Perfection in May. During the first week in June make a sowing of twice your usual size of Hair's Dwarf Mammoth, and with good cultivation and a favourable season you will have Peas of good quality until the middle of November. We have frequently, for the sake of economy in both seed and labour, obtained a large supply of good Peas by sowing Auvergne in drills 2 feet apart, letting them grow without sticks or any other support. This is a most useful sort for a dry district.

PRIMULA JAPONICA LONING FOLIAGE (E. M. S.).—It is usual for these plants to lose most of the older leaves, the plants becoming almost, and in some instances quite, deciduous. We had plants in a similar state to yours some time ago, which are now in a greenhouse throwing up strongly for bloom, which we have no doubt yours will do in a short time, the soil being kept moist, but avoid overwatering, increasing the supply with the growth. From the description you give of the insects infesting the Geranium we think you were quite correct in concluding they were red spider.

HYACINTHS IN GLASSES (Mrs. W.).—We cannot say "why some Hyacinths in glasses throw out small offsets and not others," only that they exist in embryo at the side of the bulbs when introduced to the glasses in the case of those now having them. Usually those having offsets are loose and light as compared with those having the bulbs firm and heavy, which last give the finest spikes. It does not injure the bulbs to break off the offsets, and this ought to be done, as they appropriate the support that would otherwise be expended upon the foliage and spike from the bulb.

MANURING ROSES (Midland Counties).—The winter dressing of manure ought to be given now, though we prefer to give it early in December, quite as much as a means of protection against severe weather as a manuring agent. The best application as a summer dressing would be cool manure, as that of cow dung, applying it when the flower buds appear, watering very liberally after the blooms show colour twice a week, and afford liquid manure once a week between the other waterings. A good preparation for your soil would be a peck each of fresh cow dung and soot in fifty gallons of water; falling that, 1 lb. of guano to twenty gallons of water. If the weather be wet the watering will not, of course, be necessary, but the liquid manure should not in that case be omitted. About the middle of July apply another top-dressing of manure, watering copiously in dry weather, and the liquid manure as before, which will give you fine late summer blooms. Mulching is very good, preventing, as it does, evaporation, and securing greater regularity of moisture. Grass mowings as a mulch are likely to be of benefit, but we should only use them thinly over the top-dressings of manure.

PRUNING ROSES ON THE MARITIME (G. Y.).—We should prune the first mild weather after the middle of February, or at that time if severe weather is not prevalent. The shoots 6-feet in length we should cut back to six eyes of their base, and those of 3 feet to four eyes, and if the wood be weak to three or two eyes, according to its vigour. Those with the lowest branches 2 feet from the ground must have been neglected in the previous prunings. We should seek to originate shoots nearer the surface by cutting a fair proportion of shoots of the length you state to within 6 or 8 inches of the soil, and securing shoots from those, serve the remainder the same way at the succeeding winter pruning, and having them once well furnished at the base, endeavour to keep them so, as nothing is more unsightly than a leggy Rose bush.

INGRAM'S PROLIFIC MUSCAT VINE.—Dr. Pearson, Kensington, wishes to know where he can obtain plants of this Vine raised from eyes. Oyster shells can be calcined in any fireplace or furnace. We do not know where they are to be bought calcined.

ASPIDIUM TRICHOMANES (G. McDougall).—The varieties you send we think will not be permanent, and differ but little from the normal form. We never heard of a variety called "majus."

POTATO FOR LATE USE (B. Bradford).—Plant either the Finks or Lapstone Kidney.

NAMES OF FRUITS (E. Brewster).—We have repeatedly requested that only six specimens be sent for identification. It requires more time than we can spare to find the names of many. There are thousands of named Apples and Pears. One gentleman sent us two hundred specimens, and asked that they might be named "in the next number." (E. B., Dublin).—1, Gilgill; 2, Doyenné d'Été. (E. V. R.).—Golden Russet. (J. Collis).—You have not numbered them. The round one is Gloria Mundi, and the conical one Beauty of Kent.

POULTRY, BEE, AND PIGEON CHRONICLE.

PRIZE CARDS.

THERE seems to be quite a commotion about prize cards at the present day. Exhibitions appear to compete with each other in producing new cards, highly coloured and elaborate. We have always noticed that the amateur in the commencement of his winnings is anxious to obtain these first trophies of his success, and even older fanciers much delight in collecting the pieces of pasteboard from the various meetings wherewithal to paper their poultry rooms or nail up over their pens. We have seen rooms of good dimensions profusely covered with these cup and prize cards, and a very pretty effect they made; but good-bye to such vanities in future if we have to pay for them, as would seem now to be becoming the fashion. When the fee is paid and the cost of carriage is deducted we generally find but a meagre remainder to put on the credit side in the case of an ordinary prize; but then to have something else deducted for a card is positively too much to submit to, and yet such is the case. We can all remember the outburst of indignation when, many months ago, the authorities of the Bromley Show thought well to charge 1s. for an embossed card. We came among the recipients of these souvenirs, and though we would sooner have had the shilling, yet we are bound to say that they were better worth a shilling than the pieces of card we have lately had to pay for. Within the past week we have had sums deducted from our prize money at two shows, the one being 1s., the other 4d. The latter was for an ordinary card with an im-

pression of a Coochin hen printed in bronze from a cut, we should say, of the defunct "Poultry Review." The shilling article, however, although deducted from the prize money some days ago, has not yet come to hand, but we are looking forward to its arrival with great interest. In the interval, however, we write most strongly against the system, and beg other exhibitors to help us in crushing any plan so ridiculous as that of paying for our prize cards.

We do not for a moment wish to advocate the plan lately adopted by an eastern county of putting no prize cards on the pens at all, so that they may be clean to go by post. That is as unfair as it is absurd, for the spectators who pay to come in to see the prize pens should at once be able to detect them without having to invest another sixpence or a shilling in the shape of a catalogue, which is to many, especially to the evening frequenters of poultry shows, as so much Hebrew. The cards, too, should be put up as soon as possible after each class is judged, and be plainly and clearly printed. They should also be of no colour where injurious preparations are used to obtain the same, as many of the birds for amusement eat these cards, and consequently suffer. In fact we all remember, a year or two back, Mr. Brooke losing a splendid Malay pullet from devouring her green prize card. But if a society thinks well to send clean cards round afterwards gratis well and good, for it gives an immense amount of pleasure to beginners in the fancy to store up these cards. Oxford did this, and we believe Edenbridge did also. Anyhow, we know Oxford did, and sent, too, infinitely better and prettier cards, most of them, than we had to pay for the other day.

As, however, the number of exhibitions where these extra cards are afterwards sent round free is but limited—and naturally so, for beyond the cost of printing there is likewise the postage; but as, however, the number of amateurs and others who rejoice in getting their cards back clean is great, we wonder the plan of a card-pocket in the baskets is not more resorted to. We know some do have these pockets in their baskets, but the number is so few that the packers at shows find it hardly worth the trouble to look for them. We read the other day in a letter from Mr. Nicholls, one of the Alexandra Palace Secretaries, that this was frequently the case, and we can quite understand it. If, then, exhibitors put enough stress upon these cards as to care to have them whole and clean, let them put these pockets for the purpose at the sides of their baskets, and the poultry-show attendants will soon learn to look for and make use of them. But this must become a general practice, and the pockets must be placed where they can easily be found, for a packer at a large show, where he has a great number of pens allotted to him to pack, has no time to hunt through the lining of a basket for a card-pocket, and so often, too, after all unsuccessfully; whereas if he was to know it is most likely to be there, and it is placed in a prominent place, we should have no more of those ridiculous letters clamouring for clean prize cards.

Then a word as to the get-up of these cards. We do not think they can be too plain. Fair-sized white cards with the honours clearly printed on them in red, blue, brown, or black should answer all purposes, for these are quickly read by the spectators, and after all that is what they are for. We have seen lately really extremely pretty cards in use, with almost a miniature landscape printed upon them, but we think they fail in not being sufficiently able at one glance to show what honours they record; for though all the first prizes may be in one colour, and all the seconds in another, and so on, still they do not answer the purpose so well as a clean card with the prizes printed upon them in large characters which can be understood in a moment.—W.

CANTERBURY POULTRY SHOW.

As one of the managing Committee of the late Canterbury Poultry Show I beg most emphatically to deny that sawdust was used in the pens of the birds there. For fear of any inaccuracy on my part I have communicated with the Secretary, and he has assured me none was used for such a purpose. Silver sand was used for the pens, and that only because, being snowed up, the oorn-dealers had not straw enough by them to cut into chaff, which has always been used by us on previous occasions. Sawdust was used for the floor, and for that only. Had it been used in the pens I, as a member of the Committee as well as an exhibitor, should have been one of the first to object.—WILLIAM SAVILE.

RIPON SHOW OF POULTRY, &c.

THE Committee was almost entirely formed of hearty fanciers, and with enthusiastic Mr. Wells at its head. The number of entries was more than could be well disposed to light. With true Christmas consistency the ponderous breeds were at the head of the list, *Geese*, *Turkeys*, and *Ducks* taking the lead with a grand display, but unfortunately in rather a dark part of the building. *Brahmas* came next, and among these were some good birds; the *Dorkings*, *Spaniards*, and *Cochins* also very good

classes. *Hamburghs* were very excellent as a section, as also the *Game*, of which there were three classes. Among *Game Bantams* we noticed some good specimens, but many were but poor; and some of the *Black Bantams* were good in all points, but somewhat large. *Polish* was a grand class; but we did not consider the *French* varieties equal to them. There were two Selling classes, and many of the birds were very good.

The *Pigeons* were a nice display; the point cup was carried off by Mr. Horner, also a good number of substantial prizes. In Carriers the first was a well-developed Dun cock; and second a Black, and which was readily claimed at £6, a very low price for such a bird. Pouters were first grand Black, second Blue, and third Yellow. Barbs a large class; winners good, as also pen 394 (Mawson), but some were very plain. In Almonds first was a grand hen; the second a cock of very good head properties. Any other Tumblers, first a splendid Red, second a Kite, also good. Owls were first foreign White, and second a Blue English. In Turbitts many were dirty, but the awards were evidently made to head properties alone. Nuns and Jacobins good, but many said to be trimmed; but the winners were evidently honestly shown. In Antwerps the winners were Short-faced Silvers. In Dragons first was Blue, and second Yellow; and in the Variety class the first was a Blondinette, and second Red Swallows, both grand birds. In the Selling class were some Carriers well worth the prices, and these were the winners of first positions.

For *Rabbits* there were but two classes—viz., one for Lops, and the other for any other variety; and in the first a Sooty Fawn, 22½ was first; and second a Blue doe, 21½ by 4½, several others being almost equal. In the next class first was a very promising Silver-Grey, second a Patagonian, and very highly commended also a Silver.

TURKEYS.—1 and special, Mrs. Kirk, Ripon. 2, G. Mangles, Ripon. *hc*, I. Moorey, T. H. Foden.

GREYS.—1, J. White, Netherlton. 2, I. Moorey, Ripon. *hc*, J. Nicholson, T. P. Carver, G. Mangles, R. Garbutt, T. Mason, C. Husband.

DUCKS.—*Aylesbury*.—1 and 2, C. Holt. *hc*, Col. Cathcart, Mrs. R. Williamson, J. Brookwell. *Rouen*.—1 and special, J. White. 2, J. Newton, Silsden, Leeds. *hc*, I. Moorey, C. Graham, C. Holt. *hc*, J. Brigham, G. Mangles, E. Jackson, Mrs. J. Greaves. *Any other variety*.—1, G. Sadder, Boroughbridge. 2, Col. Cathcart, Kirby Malsard.

BRAMMAS.—1 and special, E. Ryder, Hyde. 2, J. Holmes, Chesterfield. *hc*, Williams & Sons, Miss Cotes. *hc*, J. Holmes, G. Mangles, H. Wilkinson, J. F. Smith.

DORKINGS.—1 and *hc*, J. White, Northallerton. 2, J. Newall, Clifton. **COCHIN-CHINAS.**—1 and special, G. H. Procter, Durham. 2, C. Turner, Stockton-on-Tees. *hc*, S. Watts. *hc*, Simpson & Dodds, C. Carr, Williams & Sons.

FRANSES.—1, H. Beldon, Giltstock, Bingley. 2, J. Powell, Bradford. 3, J. Thresh, Bradford. *hc*, H. Dale.

HAMBURGH.—*Golden-pencilled*.—1, H. Beldon. 2, Holmes & Destner, Great Driffield. *hc*, J. Preston, H. Beldon. *Silver-pencilled*.—1, 2, and special, H. Pickles, Early, Leeds. *hc*, Holmes & Destner, G. Alderson, J. Preston.

HAMBURGH.—*Golden-pencilled*.—1, T. & G. Kidson, Thirsk. 2, J. Preston, Bradford. *hc*, H. Pickles, H. Beldon. *Silver-pencilled*.—1 and special, H. Beldon. 2, H. Pickles. *hc*, B. Myers, H. Pickles.

GAME.—*Downing*.—*Brown Red*.—1 and special, W. & H. Adams, Beverley. 2, W. Milner, Bradford. 3, J. Newall, *hc*, Holmes & Destner, J. Braithwaite, W. Youngusband, W. Johnson, W. Ormerod, W. Cleugh, J. Robson. *Any other variety*.—1, W. Milner. 2, H. C. & W. J. Mason (Pile), Birstall. *hc*, J. Cowper, Holmes & Destner (Pile), W. Johnson, R. J. Smith (Black Red). *Any variety.*—*Cock*.—1, W. Johnson, Guiseley. 2, R. Payne, Bramley. 3, W. Milner. *hc*, L. Sherwin, G. Carter, W. & H. Adams.

GAME BANTAMS.—*Black Red or Pile*.—1 and special, J. Braithwaite, Bedale. 2, G. Carter, Bedale. *hc*, E. Holt, Williams & Sons, A. Sugden. *Any other variety*.—1, W. Hudson, Epworth. 2, Williams & Son (Brown Red), Ripon. *hc*, Simpson and Dodds (Duckwing), Bedale.

BANTAMS.—*Black or White, clean-legged*.—1, C. & J. Illingworth, Hightown, Northampton. 2, J. Preston. 3, H. Beldon. *hc*, Holmes & Destner, C. J. Young, G. Raper, W. Jackson, R. H. Ashton. *Any other variety*.—1, T. P. Carver, Boroughbridge. 2, W. Richardson (Gold-alc), York. *hc*, T. Adley (Japanese). **FOLDAMS.**—1 and special, E. Holt, Williams & Sons, A. Sugden. Birmingham.

FRENCH.—1, W. Jackson, Lancaster. 2, J. G. Knight, Ripley. *hc*, J. G. Knight, B. Mills, T. S. Tate.

ANY OTHER VARIETY.—1, H. Beldon. 2, H. Pickles (Black Hamburgs). 3, W. Riley, Bingley. *hc*, Benson & Milner (Black Hamburgs), W. Linton (White Leghorns), J. Preston, H. Pickles (Black Hamburgs), Hollisworth & Horner (Sultans, Black Hamburgs, Japanese), J. Newall (Black Hamburgs).

SELLING CLASS.—*Cock or Drake*.—1, T. P. Carver. 2, J. Powell (Spanish). *hc*, T. & G. Kidson (Golden-pencilled Hamburgs), Simpson & Dodds, G. Milner (Rouens), C. Holt, J. Roberts (Rouens), G. Carter, H. Beldon, Burch and Boulter. *Hen or Duck*.—1, W. Clough (Dorkings), Skipton, Leeds. 2, H. Wilkinson (Brahmas), Skipton, Leeds. *hc*, J. Johnson (Light Brahmas). *hc*, T. and G. Kidson (Golden-pencilled Hamburgs), G. Mangles (Rouens, Brahmas), C. Holt, R. Glassby.

PIGEONS.

CARRIERS.—*Cock or Hen*.—1, E. Horner, Harewood, Leeds. 2, E. Beckwith, Sunderland. *hc*, E. Mawson, W. Hughes.

POUTERS.—*Cock or Hen*.—1 and 2, J. Hairsine, Hull. 2, R. H. Blacklock, Sunderland. 3, E. Horner. *hc*, G. Sadder, R. H. Blacklock.

BARBS.—*Cock or Hen*.—1 and 2, E. Horner. *hc*, H. Yardley, N. Suggett, E. Mawson, J. Thresh.

TUMBLERS.—*Almond.*—*Cock or Hen*.—1, W. & H. Adams. 2, H. Yardley, Birmingham. *hc*, T. Horsman, A. & W. H. Silvester. *c*, S. Lawson. *Any other variety.*—*Cock or Hen*.—1, W. & H. Adams. 2, E. Beckwith. *hc*, E. Mawson (Bald, Beards), W. H. Tweedale (Blue Bald), E. Horner, E. Beckwith. *c*, A. and W. H. Silvester, T. Horsman.

OWLS.—*Cock or Hen*.—1, A. Simpson, Rochdale. 2, J. Thresh. *hc*, E. Mawson, G. Alderson, J. Hairsine, E. A. Thornton, E. Horner. *c*, G. Alderson, E. Beckwith.

TURBIS.—*Cock or Hen*.—1, E. Horner. 2, E. A. Thornton, Hull. *hc*, T. P. Carver. *hc*, G. Alderson, E. Horner. *c*, G. Alderson.

NUNS.—*Cock or Hen*.—1 and 2, E. Horner. *hc*, H. Yardley, T. P. Carver. **MAJESTIES.—*Cock or Hen*.—1, E. Horner. 2, J. B. Bowdon, Blackburn. *hc*, M. Ord, J. B. Bowdon, P. Wilson, W. J. Wetherill.**

JACOBINS.—*Cock or Hen*.—1, G. Alderson, West Hartlepool. 2, T. E. Collinson, Ripon. *hc*, T. P. Carver, W. H. Tweedale, J. Thompson.

ANTWERPS.—*Cock or Hen*.—1, H. Yardley. 2, J. Stanley, Blackburn. *hc*, W. Clark, E. Mawson, J. Hairsine, S. Box, W. Ellis.

FANTAILS.—*Cock or Hen*.—1 and 2, E. Horner. *hc*, J. Walker. *hc*, J. F. Lovelidge.

TRUMPETERS.—*Cock or Hen*.—1, E. Horner. 2, F. S. Barnard, Tottenham. *hc*, E. A. Thornton, E. Beckwith.

DRAKONS.—*Cock or Hen*.—1, W. H. Johnson, Eccles. 2, J. Stanley. *hc*, E. Mawson, T. E. Collinson, J. Stanley.

ANY OTHER VARIETY.—*Cock or Hen*.—1 and *hc*, M. Ord (Ice, Blondinette), Durham. 2, E. Horner. *hc*, H. Yardley, A. & W. H. Silvester, E. Horner. *c*, S. Lawson (Ice).

SELLING CLASS.—*Single Bird*.—1, G. Sadder (Carrier). 2, J. Stanley (Barb). *hc*, W. Boddy (Carrier), W. Sherwin, E. Horner, J. Jackson (Carrier), W. Ellis. *Pair*.—1, G. Sadder (Carrier). 2, W. Alderson, Ripon. *c*, J. Thompson, A. F. Byford (Blue Turbitts).

RABBITS.

LOP-EARED.—*Buck or Doe*.—1 and 2, A. Robson, Northallerton. *hc*, J. S. Robinson, T. Myton. *hc*, Messrs. Umpleby. *Any other variety.*—*Buck or Doe*.—1, C. & J. Illingworth. 2, T. Myton (Belgian Hare), York. *hc*, J. S. Robinson (Silver Grey). *hc*, H. Bradwell (Himalayan). *c*, W. Benson (Himalayan).

CAGE BIRDS.

BELGIAN.—1 and *hc*, W. Forth, Pocklington, York. 2, W. Shackleton, Ilkley. *c*, T. Foster, W. Howard.

NORWICH.—*Clear*.—1, T. Tenniwood, Middlesborough. 2, C. Burton, Newgate, York. 3, G. Simpson. *hc*, W. Forth.

YORKSHIRE.—*Clear*.—1, G. A. Watson, Harrogate. 2, W. Shackleton. *hc*, R. Usher, G. A. Watson.

MARKED.—1 and special, J. & H. Garbutt, Northallerton. 2, G. A. Watson. *hc*, J. Young. *c*, W. Shackleton.

MARKED.—1, C. Burton. 2, W. Forth. 3, J. Young. *hc*, T. Tenniwood. *c*, T. Foster.

CANARIES.—*Any other variety*.—1 and *c*, T. Humphrey, York. 2, W. Forth. *hc*, T. Tenniwood.

ENGLISH OR FOREIGN BIRDS EXCEPT PARROTS.—1, W. Addison. 2, J. & H. Garbutt. *hc*, W. Cowling. *c*, W. Hall.

PARROTS OR PARROQUETS.—1 and *c*, Mrs. Rollinson, Ripon. 2, H. Wescoe, Harrogate. 3, Williams & Son. *hc*, W. Sherwin.

SELLING CLASS.—1, C. Lickley, Ripon. 2, W. Sherwin, Ripon. *hc*, Miss Wells. *hc*, W. Addison.

Mr. Dixon judged the poultry; Messrs. Hawley, Fletcher, and Robinson the Pigeons; and Mr. Hutton the Rabbits, in place of Mr. Cannan, who was ill.

BRISTOL POULTRY SHOW.

EACH of the great shows has its peculiar point of interest and attraction. At Oxford we look for the first appearance of some of the year's champions; at the Palace we gaze on the collective beauty of the country's poultry-yards till we are puzzled with its very variety, and think with pity on the Judges. At Birmingham we see, or try to see, fresh-caught from their park runs the representatives of many yards, which make their sole appearance there from the venerable antiquity of the Show. Bristol, too, has its special features. There we see in comfort and quiet, in a perfect light and arrangement, the pick of the great exhibitors' yards, for by this time rubbish has been weeded-out, and the inutility of showing second-class birds discovered. Several west-country exhibitors, too, reserve the best of their studs for competition there.

Bristol is now the third show in magnitude, and well does it deserve so to be. The minutest details of management appear excellent, and are a convincing proof of the power of one energetic will to organise where committees fail. Order seems to reign; there is no favouritism; all exhibitors are alike excluded before the opening of the Show, and hence none are disappointed and none grumble. The poultry world is greatly indebted to Mr. Cambridge for showing how things ought to be managed at shows generally, as well as for managing them at Bristol.

The poultry, save the smaller varieties, were ranged in one tier throughout the whole Show, and consequently could be fairly judged; the average quality was almost uniformly excellent through all classes; the judging was fairly good—we fear we cannot say more—and the visitors by no means so numerous as could be wished, or as the Show deserved. The birds were supplied with green food and looked happy, and not in the painfully feverish state we see them in the fetid atmosphere of Bingley Hall.

DORKINGS head the list with four classes for Coloured birds. The adults we thought decidedly better than the cockerels and pullets. The first cockerel is Mr. Hamilton's now far-famed winner, looking much better than he did at Oxford and at the Crystal Palace. Second a big bird, but we did not admire him; he is somewhat squirrel-tailed, and his toes much crooked. Third a good bird in many ways, but too red in the feet and not well clawed. Fourth we thought the second-best bird, dark in plumage with very white feet. On the whole we have seen better cockerel classes at Bristol. **Pullets.**—The pullet class, too, was hardly up to the mark. First a large and fine bird good all round. The two next awards we could not understand. Second was a nice bird in colour but not large, and with dark scaly legs. Third a large very dark bird with superlatively bad feet, little deformed, fourth toes high up the legs, and spurs behind. Fourth a fair bird in size and good all round. We should decidedly have put her second. Good birds of Mr. Beechey's and Mr. Walker's were unnoticed. **Cocks.**—This class was singularly fine in size, though a large proportion of the birds were out of condition and had sore or diseased combs. First-and-cup was a noble bird, a thorough Dorking all over, and in wonderful condition. Second not by any means his equal, but a fine bird with good points. Third not in first-rate condition, but a bony and good bird. A fourth (extra) prize

was given in this class to an immense fellow; his feet seemed the worse for wear, otherwise he must have been higher. Hens were another good class. First a beautiful bird all round, and rightly placed. Second another noble bird, not quite so good in feet. Third lighter in colour. We preferred Mr. Beechey's highly-commanded bird to her.

Silver-Gray cocks were a poor class beyond the two first winners. First a very silvery and showy bird but with one spur behind. Second the Birmingham cup bird, not looking as he did, but having lost his sickles and apparently been in a fray of late. Third poor, speckled in breast and yellow in hackles. His owner's unnoticed bird was better. Hens were large and good. First a fine bird but with an ugly little straight comb. Second not so good as third in our opinion.

Whites.—First the Crystal Palace and Birmingham cup-winners, now very handsome with flowing sickles. Second had a handsome comb but no tail. Third was a curiosity, a large single-combed bird much ticked with colour on the back and hackles. We were informed on the highest authority that he was last year a celebrated winner in the Coloured classes, and went through this strange transformation at his last moult. This award opens a grand field for discussion, firstly as to whether a single comb is or is not a disqualification in a White Dorking; secondly whether coloured markings are admissible. We have never seen them before in a prize pen at any little local show. Hens.—First a long bird beautifully shown, but by no means the right bird in the right place. Second a square well-shaped Dorking, apparently rather antique. Third large and very white but with a broken tail. Her owner's unnoticed bird (the Palace cup hen) struck us as otherwise being the best bird in the class.

The COCHINS were very splendid, we should almost say they were the best classes in the whole Exhibition. Every variety was well represented, and we wonder if a better collection of adult White cocks and hens was ever seen before. Blacks, too, were admirable, and seem to be attaining the true Coochin shape with other good points.

In **Buff** cockerels the winner won the champion cup for the best pen in the Show. He is a good bird in every way, and we have described him before, but we should say there were many other single birds in the Exhibition which were at the least worthy of sailing in the same boat with him. The second and third were good cockerels and of nice colour. We liked all Mr. Burnell's three noticed birds immensely, and so we did Mr. Hodson's unnoticed one, and if we mistake not this latter was the Swindon cup cockerel. Buff pullets were capital; the winner was charming in colour, but a little too hooked for our taste. We never mind heavy feathering if only it curls well round, and so almost loses itself in the fluff. Second and third were very pretty birds. We liked, too, Mr. Burnell's very highly commended pen, and Mr. Crabtree's, 183. In old Buff cocks the first and second were both grand birds and well worthy of their places. They were in good condition and looked bright and strong, as we must say the Winkburn Hall birds generally do. Third was another very good old bird of grand shape and size. In hens the cup bird was too pale for our taste. She is a fine bird, but we like a richer colour. Second a good hen and in pretty condition. Third also a fine hen, and apparently quite young. Nearly every bird was noticed, and the quality throughout was wonderful good.

In **Partridge** cockerels Mr. Shrimpton's bird is coming to the front. He is a beautiful chicken and the same, we believe, as we noticed at the Palace as likely to make a good one. The first was a good cockerel, large and light. The second we have commented on before, he is looking as well as ever. In the winning pullets the first was beautifully pencilled, but we thought her rather small. Second, a large bird and closely coming-up to her. Third, a neat bird and fairly marked. In old cocks the winners only call for remark, they were in fine condition, and we liked their position, though we believe others thought the first should have come in between Mr. Taylor's two birds. In hens the first won easily, and a grand one she was. We almost thought we should have come here for the cup Coochin hen. She is a model in shape and markings. Second and third were good hens and well shown. 209 (Rodbard), a very good bird, and we should think one useful for stock purposes.

White cockerels were weak. We thought the winner was well placed, but he is nothing wonderful. Second was the Oxford cup bird. He has lost some of the red he had on his wings, but he is not a good colour even now. Third we did not like, much preferring any of the other noticed birds. The fault throughout the class was bad colour and want of shape. Pullets were better. Mrs. Tindal's manager informed us that her winning bird had not been shown before. She is beautiful in colour. The second was Mr. Fowler's bird, and our ideas about her are well known. The third was poor in feathering, and narrow. To our mind the best pullet in the class was Mrs. Holmes's. We thought she was a perfect gem and should have won easily. Mr. Woodgate's pens were empty, as they were, too, in the cockerel class. 236 (Acton Tindal) unnoticed, was

the bird we believe which has been under dispute. White cocks were very grand. The winner was the Yarmouth bird, and very nice he is. He is a son of "Marquis," and was bred at Pembury. Second is a very fine old cock with a good head and chest, but a little tinged in colour. Third we believe was the Devonport cup bird. He is superb in colour and hackles. We must confess there were some other birds which we liked as well as any of the winners—namely, 247 (Bloodworth), 248 (Tindal), 254 (Procter), and 257 (Talbot), but the class was so even that we can well imagine the Judge being perplexed. Hens were almost better than the cocks, and made to our mind the best Coochin class in the Show. The winner is enormous, and grand in shape and feathering; *et cetera tout*, for her comb is hideous, and her colour bad. Second a neat hen and third here last year. Her comb is very beautiful, and rising four years she was more like a pullet than one or two birds which won in that capacity in other parts of the Show. Third was the bird which won the cup in 1875 for the best Coochin hen in the Exhibition, but she is not in good feather now. Among many other very excellent birds those calling for especial remark as being very good are Messrs. Whitehead's, Talbot's, and Percival's.

Black Cochins were splendid, the two best classes of the colour we ever saw. Introducing these two fresh classes must have paid Mr. Cambridge well. The winning cocks were all good. Mr. Darby's were in gorgeous bloom and very black throughout. Mr. Badger's birds were good and glossy, but not so large as the winners. In the next class hens won all the prizes. Pullets can do nothing in Cochins against hens, though we should say Mr. Turner's must have been near third place. We liked the first hen very much, and if she is sound in colour she is cheap at catalogue price. The noticed birds were all good, and also many of the unnoticed ones. We were very glad to see these handsome birds so looking-up, and still more so to find how well Cochins generally mustered, and that they appear to be as great favourites as ever. Since writing the above we learn that Mrs. Holmes's White pullet was left out of the prize list because the Judge thought her an elder bird. By January it is very difficult to know what is a pullet and what is not, but in this case we thought the bird was certainly an 1876 chicken, and much younger-looking than some of the other prize Coochin pullets in the Show.

SPANISH.—We always expect to see a good display of this variety here. The date of the Show suits them, and for a number of years some of the most successful exhibitors of Spanish fowls have resided at Bristol. The collection this year has, we think, equalled any of its predecessors. Possibly on previous occasions one or two grander specimens may have been produced, but the general quality and condition of the birds would, we thought, have compared favourably with any we have ever seen. Though we admired the beautiful manner in which the birds were shown, we desire our remark to be clearly understood as referring to those that were honestly shown, and not to those that had had the scissors so ingeniously applied to their combs. We noticed four instances in which, to lighten the weight and prevent the comb falling over, a large piece had been cut from the back, and in another case the serrations had been shaped to an approved pattern. We trust this matter will receive the attention of judges, and that the offenders will accept this warning, as we shall expose every case of this description that in future comes under our notice. **Cockerels.**—First (Hyde), pretty bird with a good quality of face, and a comb nicely curved over the back of the head, which showed no signs of giving way. Second (Miss Brown), a good bird, a little more open in the lobe than the winner, but the white was coarser, and the back of the comb not so well placed over the head as that of the winner. Pen 518 (Boulton), third, also a good-faced bird. We will describe his comb on a future occasion, if we ever have the opportunity of seeing him. Fourth, 529 (Jones), a neat bird that will improve and take a higher position at some future time. **Pullets.**—First (Goddard), the winner at the Alexandra Palace, and second at the Crystal Palace, a fine open-lobed bird, but she appeared to be a little crooked in the neck. Second (Chilcott), a large-faced bird, but inclined to be coarse. Third, same owner, was small in face, but the white was of beautiful quality. Fourth (Jones), larger in face, a good white but very wrinkled. Mr. Jackson's and Mr. Palmer's highly commended pens we liked, and they must have run the third and fourth pens very closely. **Cocks.**—First (Jones), a fine-faced bird. Second (Chilcott), in many points better, but his eyes appeared nearly closed, which doubtless lost him the first position. In other respects we considered him the best in the Spanish classes. Third (Jones), a good-faced bird, but his comb looked suspicious. Pen 554 (Mills), a Crystal Palace winner, we liked better. Hens.—First (Mrs. Alsopp), a beautifully-faced bird, and in fine condition. Second (Chilcott), almost as good. Third, a nice hen but not yet ready. 560 (Moore), the largest-lobed hen in the class, but out of condition. Pen 563 (Sillitoe), unnoticed, we thought should have been highly commended, she had many good points. We should have considered the

classes well judged had the manufactured combs been disqualified.

HAMBURGH.—The Spangled classes were far better than the Pencilled. We fear that the latter, especially the Silvers, are declining. It is a pity, for few birds are more beautiful, and none better layers.

Gold-spangled cocks.—First was a good bird all round; the cup for the best Hamburg cock justly went to him. Second pressed him hard; third a fairly spangled bird with a defect in the back of his comb. We preferred the very highly commended bird and Mr. Pickles' highly commended one. Hens.—Why Golden-spangled hens should in so many cases be out of condition while Silvers are blooming is always to us a mystery. First-and-cup well deserved her position; her moons are very round and evenly studded, and her condition and style admirable. Second a glossy and well-spangled hen. Third splendid in spangling; her comb and grizzly under feathering we did not like. The class was a good one, and among the highly commended were many birds worthy of prizes.

Silver-spangled cocks.—First was capital in comb with large spangling; he carried his tail in too pheasant-like a style. Second a bird with much smaller but evenly set moons. Third was a little yellow; in form we thought him the best bird in the class. The rest were not good. Hens.—First a marvel of spangling, which is as round and distinct as we have ever seen. Second a pretty bird, her spangles not large. Third a bird with large moons, but not evenly distributed over her.

Gold-pencilled cocks.—First a nice bird all round; his comb not sufficiently square in front. Second good in colour, but with a comb apparently doctored. Third not very even in colour. The very highly commended bird is very rich and dark in colour, but rather too square in form. Hens were mostly defective in breast-marking. First evenly barred, especially on the under parts. Second rich in ground colour. Third also good in ground colour, with small fine pencilling, but mossy towards the tail.

Silver-pencilled cocks made but a sorry muster. First a nice little bird, not particularly good in comb. Second coarse in comb, with sickles nicely laced. Third grizzly in tail, otherwise the best bird in the class. Hens.—First a well-barred bird, clear in hackles. No others were remarkable.

Black.—This variety is gradually rising in estimation; twenty cocks and nineteen hens were entered. The average quality was very high, though we saw no strikingly good birds. The first cock is lustrous, with a lovely comb, but not particularly good in carriage. We should ourselves have put out the second for an ugly unnatural comb. Third was a fair bird. Pen 670 (Mrs. George) contained a nice cock, his misfortune (?) being that his comb was honestly shown. When will Hamburg judges take this merit into consideration? Hens were a fine class, and very difficult to judge. First a bird excellent in style and colour, her comb not straight. Second a pretty bird. Third we thought a mistake; she has a bad comb and no style. One of the most prominent features of a Hamburg is the comb, and consequently this should not be overlooked in hens any more than in cocks.

GAME.—With a few exceptions we did not consider the Game classes here up to the usual standard. In the Reds Mr. Mathews won all the first prizes with birds that fully supported the owner's reputation. Mr. Dutton showed a good Black Red cockerel that was third in the pullet class. We did not like the second-prize hen; she has some good points, but was short in legs and wanted the style of a Game fowl. Any variety.—In the cocks Mr. Voisin was first with a good Duckwing, closely pressed by Mr. Mathews. Mr. Fitz-Herbert showed a good Pile here unnoticed; had he been in condition we think he would have found his way to the prize list. In the class for hens all the prizes went to Duckwings; here again we much admired a Pile shown by Mr. Fitz-Herbert.

MALAYS.—These formed two of the best classes of the breed we have seen for many months. There were close on forty pens; and really next year, Mr. Cambridge, with a little help you may almost venture to make classes for young and old birds as in Cochins and Dorkings, &c. The winner was a finely-grown cockerel, good in shape and style, and with a true Malay head. Second another good cockerel, smart and bright. Third went to a fine old cock, but he had evidently been fighting and did not show to advantage. Among the other birds Mr. Hinton and Mr. Payne sent good cockerels, both hard in feather and good in head. A very nice pullet won in the next class; she was the stamp of bird we admire. Second and third were strongly-made good birds, but one or two of those noticed were closely treading on their heels. There were a number of birds very light in colour. Of course they may be exhibited of any colour in an open class, but our choice is for the Dark birds, they look so much richer and handsomer. We congratulate, however, Malay fanciers on their final appearance in 1876, even if they have been but poorly represented at the earlier shows of the year.

POLISH.—Gold and Silvers and Blacks were all good, and

all represented in the prize list. Both the two section cups came here also. The quality was exceedingly good, and apparently the three dozen pens entered were the cream of former shows. In cocks Mr. Beldon's old champion looked magnificent. Second went to another Silver almost equal to the cup bird. Third a very nice Golden, rich in colour and good in crest. Mr. Unsworth had a good Black highly commended. The noticed birds were all worthy of praise, and would have won in difficult competitions at most shows. In hens a Silver again won, a marvel in crest, markings, and shape. Second a good Golden, nice in colour; and third a superb Black, as good a bird as we ever saw of the colour. Five more birds were very highly commended, and five more highly commended, so this will show there was some quality, and the Judge had some work before him.

FRENCH.—Houdans.—First (Wood) a fine bird with good crest. Second (Vallance) a well-marked, nice-shaped bird. Third (Scott) a good bird, but we think we should have given the preference to pen 901 (Vallance), highly commended. Hens.—First (Thomas) a grand bird, with splendid crest. Second (Vallance) a neat, evenly marked bird. Mr. Quibell and Mr. Lake showed pens, highly commended, that we liked very much. Any other variety.—In cocks Mr. Outlack was first with a grand Crève, and in hens Mr. Stevens secured the first prize with a bird of 1875. Mr. Crabtree's second-prize hen was a splendid bird, and must have run the winners very close.

BRAMMAS will be noticed next week.

LEGHORNS.—This breed had four classes and made a nice show. They seem to boast a fair party of admirers, who we think most plucky to get classes for their birds and do their best to establish them as a permanent breed. We think them started now, and they will probably gain, not lose, ground; but like Silkies and such like they will never, we fear, be able to support classes everywhere, and will have to go into variety classes mostly, save at the large shows and where amateurs guarantee the prize money. The Browns were very good, the ears have improved very much, and the size too increased. Mr. Kitchin sent his old bird for admirers to see, as he has been the sire of so many of the winners in 1875, not only in Mr. Kitchin's name but in others. Mr. Brown had his imported cocks in the list, and nicely they looked.

Whites were very good, but so many were shown dirty. It is the greatest disadvantage, for White birds depend so much upon cleanliness. We thought more size was wanted in the cocks especially. Here, too, the earlobes have much improved.

MINORAS.—Seventeen pens were entered, of these the majority were Black. Hens were better than the cocks. We conclude their combs are easier to obtain. The winning Blacks was very smart and stylish. Mr. Williams's pens were also capital and nicely shown. The first hen had a huge comb, it looked like a beefsteak almost, and quite hid the rest of her head. Second and third good birds and bright in colour. We hear on all sides wonderful accounts of the laying powers of these birds, and should imagine they will soon be more generally found in other parts of England than the west, where they now mainly seem to exist.

THE VARIETY CLASS.—Here was the usual pot-pourri, but not quite so well mixed as usual. In cocks a pretty Sultan was first; a nice Cuckoo Coochin which we preferred to the Sultan second; and a neat Silky third; the latter good in comb, which is very rarely found in cocks. Hens were a very interesting class, a nice Cuckoo Coochin first, a Sultan second, and a lovely Silky pullet third, of what we call a perfect size, but much larger than Mr. Darby considers his usual type. More Cuckoo Cochins, Cuckoo Bantams, a Sultan, and an Andalusian were highly commended, all good of their breeds; also a pretty Indian Jungle pullet with a beautiful breast.

BANTAMS.—Game Bantams do not hold their own; they are both larger, and the Reds less rich in colour than they were some years ago, still as a rule the winners show true gamy style. The cup for the best pair of Game Bantams went to the first pair in the class for Reds; they were Black Reds, the cocks very stylish, not small. Second were Black Reds again, smaller birds, but the cock deficient in wing-colouring. Third were Brown Reds. In the class for any other variety Piles were first; Duckwings of very high carriage second; Duckwings third.

Black Bantams were a good class of seventeen entries. The cup pair were longer in legs than we like, but the cockerel very good in comb and a pretty bird. The second cockerel was, like many others, devoid of side tail feathers, a great deficiency in our judgment. The cockerel in the third-prize pen had better sickles, but not so natural a comb as the first and second.

Sebrights.—First were Silvers, very white in ground colour, evenly and beautifully laced. Second Silvers again, more heavily and less precisely laced. Third well laced and good Golden; we should have put them second.

Whites are looking up again, though they do not reach the Black standard; Mr. Tearle held his old place with a pretty pair. Second a nice pair but rather large. Third small but far too high in combs.

Game Bantam cocks.—First a neat Black Red, but by no means small. Second a very dirty Pile. Third a Black Red, deficient in tail. We much admired Mr. Nelson's very highly commended Black Red.

There were two Selling classes for Bantams. Sebrights at any moderate price seem always to find purchasers. In cocks first was a Silver-laced bird, a trifle large, but a bargain if sold at anything like the catalogue price. Second an indifferent Black. Third a pretty Black Red. In hens fair Blacks were first, Black Reds second, and third were Silver Sebrights with buff ground colour.

Waterfowl.—Only five pens of Aylesburys, with all the winners good. The first and second very even in quality. Rouens made a score of pens, good in colour and shape most of them, but the cup pen a-head. Second, also, very good and well made, and not far off the cup pen. Third again a good pen. Mr. Pope and Mr. Parlett had good pens highly "condemned." Black Ducks were lovely. The prizes were divided among the three cracks. We think it was almost a toss-up which won the cup of the first or second-prize pens, for both were beautiful. Notices were few, for we thought one or two more pens deserved them. What would have won here five years ago would not get a second look from a judge in the present day, for the colour has been got so beautiful, and the size so much reduced. Still we doubt if the great exhibitors are wise to monopolise all the prizes at every show; we fear it will bring bad, not good, fruits. The fancy Ducks were also beautiful, and the whole class noticed. It is impossible to criticise, the birds were so even, most of them. We never could make out how the winners are selected in such company.

Geese only eight pens, all good. Of these two contained the handsome Chinese of Mr. George.

Turkeys only six pens. Surely Christmas must have been too much for them.

PIGEONS.

The history of Bristol Show resembles that of many a persevering Englishman. Such a one determines to persevere whatever happens. For some years no success, or success outwardly, but the purse empty. Still he goes on; he won't give in. Timid friends say, "You had better leave off;" but no; his answer is, "I will succeed at last," and he does. So of Bristol Show—pecuniary loss for eight years, the favourable turn comes on the ninth, and full success on the tenth. I enter the Hall, and find it, as always, the best place of exhibition out of London that I am acquainted with: the arrangements good, the provision for the Pigeons suitable—a small vessel for food as well as water, which is especially excellent for the heavily wattled Pigeons who cannot see to pick up their food from the floor. I have noticed the temperature of the Hall as being suitable, and especially not being variable. This brings me to say a word about the Birmingham Show. The Pigeons are placed in an atmosphere so intensely hot in the evening that I, enjoying heat of all things, have been obliged to leave the gallery; then it becomes early in the morning bitterly cold. So long as the Committee insist upon placing the Pigeons where they now place them, so long fanciers should refuse to send their birds, and therefore the Show comes to an end. In a better place it may go on, but, of course, can never be what once it was before the London shows were in existence. I am no exhibitor; I simply write from kindly feeling for the poor birds. No word of condemnation can, happily, be written as regards the Rifle Drill Hall, Bristol.

The **Pigeons** numbered about six hundred. Carriers (cocks, Black or Dun).—First-and-cup magnificent in colour and in beak-wattle. The second, in my judgment, not so good as the third. The class, as a whole, superior. Carrier hens.—First a good stout Dun. Carriers any other colour, which means, of course, Blue, the hens better than the cocks, the first of the latter being a wonderful bird. Carriers any colour, bred in 1875, brought out as first-and-cup a thoroughly good-going cock, Dun, and such a Dun, indeed, both as to colour and shape, is one of which its owner, Mr. W. Siddons, may well be proud. Pouters.—These birds are advancing in England, and becoming far more numerous. Mr. Bullen's Black cock first, as it deserved; there is no doubt of its superiority. A bad-coloured Black, almost a half-blue, but with fine limbs, was second. Third a good Blue. No. 1555 (Fulton) a bird of excellent colour. Black or Blue hens.—First-and-cup a fine bird, but the crop not globular, but too oblong. Second a charming Blue and much better-shaped crop. Among any other colour I must notice the first White cock, a very graceful bird, but wants more crop. No. 1570 a good Red, and 1569 a nice White. Hens, any other colour.—First a wonderful bird if in fair condition. Second Mrs. Ladd's graceful White, but wants crop. Third a good Yellow hen. The Almond Tumblers good classes, both cocks and hens, and colour richer than formerly. Shortfaces.—First a lovely Kite (J. Baker). Foreign Owls again not so numerous as their English cousins, but a nice and variously coloured lot, including one, No. 1611, a White with a blue tail. Barbs few but good, and none repulsive-looking from old age. Mr. Maynard's hen

(first cup) the cream of the lot. The young Barbs were very promising. The Trumpeters, out of ten pens all but two were very good. Jacobins, Red or Yellow.—Here a country fancier, Mr. Heath of Calne, secured a great triumph with a bird that had never been shown, a Red cock; he was first, and Mr. Fulton's Yellow, the champion of the Crystal Palace, was third. Oh, what changes men and Pigeons have to undergo! The second a Red with a somewhat ragged hood. No. 1557 a charming bird (Fulton). Jacobins, any other colour.—First a Black, good in colour but poor in hood. Second a deal the best, being a good Jacobin (Black), but probably the stained beak (lower mandible) made him second only. Third, hood too far back. Where were the Whites, for none appeared? Fantails a good class. Turbits very strong classes. First (Red or Yellow) a very nice Yellow. Among the Any other colour, first-and-cup a capital Black; second a pretty Silver; third an equally good Blue. English Owls.—First-and-cup a noble Blue, a thorough English Owl, fine, large, bold-looking. Second a good Silver. One, No. 1744, too small for an English Owl. Of the Nuns several pens were empty, but those that were full were deserving. Magpies very numerous, chiefly to be noted by an excellent Yellow, second-prize, being marked by its owner at only a guinea. Dragons, very large entries, as now usual in England. No one could withhold his tribute of admiration at these excellent birds. Blues and Yellows were particularly good. Mr. Richard Wood was very successful in all classes. Crowds of Antwerps; but I could not but ask myself, Where do the Shortfaces end, and the Longfaces begin? There was an interesting class of Flying Tumblers, a variety needing encouragement. Among them was a Cumulet, which is scarcely a Tumbler. Any other variety.—First Mr. Fulton's Black Turbiteen; third a most lustrous Archangel; third a fine Runt. This was so good a class that more than half the birds were noticed. There were two large Selling classes, which probably paid the Committee better than their owners.

Such was the Bristol Pigeon Show. Good birds shown in a good place, and few deaths to follow, for the weather was not cold for their transit, and the exhibition-room, as I have before remarked, in every way suitable.—WILTSIRE RACON.

DONKES.—Coloured.—Cockerel.—1, Rev. H. F. Hamilton, Combe St. Nicholas, Wiltshire. 2, E. Barnett, Sion. 3, Viscount Turnour, Fawcett. 4, R. W. Beachy, Kingscliff. 5, R. W. Beachy, W. Harvey, J. Walker. 6, O. E. Cresswell. Pullet.—1, J. White, Northallerton. 2, Miss J. Milward, Newton St. Lee. 3, E. Feating, Newtown. 4, A. Jackson, Broughton. 5, E. Hyde, J. L. Lowndes.

DONKES.—Coloured.—Cock.—Cup and 1, F. Parlett, Galleywood, Chelmsford. 2, W. Cople, Ekeleaton. 3, R. W. Beachy. 4, Rev. H. F. Hamilton. 5, R. W. Beachy. 6, F. Parlett. 7, J. Walker, Spring Mount, Rochdale. 8, Rev. H. Hamilton. 9, J. White, Rev. E. Bartrum, R. W. Beachy, P. Ogilvie, E. Ponting, W. H. Denison.

DONKES.—Silver Grey.—Cock or Cockerel.—1, L. Wren, Lowestoft. 2, O. E. Cresswell, Bagshot. 3, W. W. Rutledge, Kendal. Hen or Pullet.—1, J. Walker. 2, W. W. Rutledge. 3, O. E. Cresswell. 4, O. E. Cresswell, Mrs. Bidder, W. H. Denison.

DONKES.—White.—Cock or Cockerel.—1, O. E. Cresswell. 2, W. Badger, Little Ness. 3, R. W. Beachy. Hen or Pullet.—1, Mrs. A. Tindal, Aylesbury. 2, A. Darby, Shrewsbury. 3, O. E. Cresswell.

COCKINS.—Cinnamon or Buff.—Cockerel.—Cup and 1, Mrs. A. Tindal. 2, R. P. Percival, Northenden. 3, G. H. Proctor, Durham. 4, J. Cattell, W. A. Barnell, Southwell. 5, W. P. Ryland, W. A. Taylor, Mrs. Allsopp, Capt. E. Mills, W. A. Barnell. Pullet.—1 and 2, W. A. Bindley, Edgaston. 3, Rev. G. H. Hamilton. 4, W. A. Barnell. 5, Mrs. Allsopp, Capt. T. S. Robin, Mrs. A. Tindal, W. A. Barnell, W. H. Denison.

COCKINS.—Cinnamon or Buff.—Cock.—1 and 2, W. A. Barnell, Southwell. 3, J. Walker. 4, J. Bloodworth, W. P. Ryland, J. Cattell, W. A. Taylor, Henry Lingwood. Hen.—Cup and 1, G. H. Proctor. 2, J. Cattell, Birmingham. 3, R. P. Percival. 4, A. J. Symonds, W. A. Barnell. 5, R. Fowler, J. Bloodworth, Mrs. Allsopp, O. Bloodworth, W. P. Ryland, J. Walker. A. Darby, R. P. Percival, J. Gwynne.

COCKINS.—Brown or Partridge.—Cockerel.—1, J. Ashcroft, Liverpool. 2 and 3, Mrs. A. Tindal. 4, G. Shrimpton, Leighton Buzzard. 5, Mrs. Atterton, Mrs. A. Tindal, R. P. Percival, G. Shrimpton. Pullet.—1, R. P. Percival. 2, Mrs. A. Tindal, Aylesbury. 3, F. Duke-Laurie, Alton. 4, J. N. C. Pope, J. Ashcroft, Liverpool.

COCKINS.—Brown or Partridge.—Cock.—1, Mrs. A. Tindal. 2 and 3, W. A. Taylor, Manchester. 4, F. Wilton. Hen.—1, Mrs. A. Tindal. 2, J. Ashcroft. 3, R. P. Percival. 4, J. E. Rodbar, T. Aspin, W. A. Taylor, G. Shrimpton, Mrs. Foy.

COCKINS.—White.—Cockerel.—1, W. A. Barnell. 2, Mrs. A. Tindal. 3, J. H. Nicholls, Lostwithiel. 4, W. A. Barnell, J. H. Nicholls, J. Turner, G. Shrimpton. Pullet.—1, Mrs. A. Tindal. 2, J. K. Fowler, Aylesbury. 3, T. H. Waterman, A. T. H. Waterman.

COCKINS.—White.—Cock.—1, A. Darby. 2, Mrs. J. T. Holmes, Wells. 3, T. H. Waterman. 4, J. A. Tindal. 5, J. A. Tindal. 6, J. A. Tindal. 7, J. A. Tindal. 8, J. A. Tindal. 9, J. A. Tindal. 10, J. A. Tindal. 11, J. A. Tindal. 12, J. A. Tindal. 13, J. A. Tindal. 14, J. A. Tindal. 15, J. A. Tindal. 16, J. A. Tindal. 17, J. A. Tindal. 18, J. A. Tindal. 19, J. A. Tindal. 20, J. A. Tindal. 21, J. A. Tindal. 22, J. A. Tindal. 23, J. A. Tindal. 24, J. A. Tindal. 25, J. A. Tindal. 26, J. A. Tindal. 27, J. A. Tindal. 28, J. A. Tindal. 29, J. A. Tindal. 30, J. A. Tindal. 31, J. A. Tindal. 32, J. A. Tindal. 33, J. A. Tindal. 34, J. A. Tindal. 35, J. A. Tindal. 36, J. A. Tindal. 37, J. A. Tindal. 38, J. A. Tindal. 39, J. A. Tindal. 40, J. A. Tindal. 41, J. A. Tindal. 42, J. A. Tindal. 43, J. A. Tindal. 44, J. A. Tindal. 45, J. A. Tindal. 46, J. A. Tindal. 47, J. A. Tindal. 48, J. A. Tindal. 49, J. A. Tindal. 50, J. A. Tindal. 51, J. A. Tindal. 52, J. A. Tindal. 53, J. A. Tindal. 54, J. A. 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BRAMMAS.—Light.—Cockerel.—1. Horace Lingwood. 2. M. Leno, Dunstable. 3. T. Webb, Sutton Coldfield. 4. and 5. W. Tidd, Erding. *he*, Mrs. G. Bain. *Pullet*.—1. P. Haines, Palgrave. 2. Horace Lingwood. 3. Capt. W. Savile, Wye. 4. H. C. White, Birmingham. *he*, T. Webb, R. E. Horsfall, W. Tidd. *he*, Mrs. J. T. Holmes, J. Widdowson, J. Turner, H. Stephens, Rev. G. Watson.

BRAMMAS.—Light.—Cock.—1. Horace Lingwood. 2. R. E. Horsfall, Liverpool. 3. P. Haines. *he*, Rev. G. Watson, J. Gilbert. *he*, Hon. H. B. Hamilton, R. P. Percival, Mrs. W. E. Drummond, Mrs. A. Tindal, Rev. G. Watson. *c*, J. Bloodworth, Rev. G. Watson. *he*, Mrs. J. Tindal. *he*, J. Turner, S. S. Sambrook, Chipping Campden. *he*, Rev. G. Watson. *he*, P. Haines, Mrs. J. T. Holmes, J. Bloodworth, Mrs. A. Tindal, Rev. G. Watson, P. Haines. *c*, Horace Lingwood.

SPANISH.—Cockerel.—Cup and 1. S. H. Hyde, Bristol. 2. Miss E. Browne, Chard. 3. J. Boulton, Bristol. 4. E. Jones, Clifton. *he*, E. Jones, G. K. Chilcott, J. R. Robard, H. Hyde, J. Boulton, J. Walker, Mrs. Tonkin, W. R. Bull. *c*, E. Jones, E. P. Le Sueur, J. Thresh, T. Bamfield, J. Walker. *Pullet*.—1. H. Goddard, Hertford Road, London. 2. and 3. G. K. Chilcott, Montpellier. 4. E. Jones. *he*, J. Palmer, E. Jackson, J. Barry, Mrs. Allsopp, J. Aldridge, jun. *c*, J. Walker, J. Barry.

SPANISH.—Cock.—1 and 2. E. Jones, Bristol. 2. G. K. Chilcott. *he*, D. M. Mills, J. Boulton, Mrs. Allsopp. *c*, T. Bamfield. *Hen*.—Cup and 1. Mrs. Allsopp, Worcester. 2. G. K. Chilcott. 3. P. F. Le Sueur, *he*, T. Moor, S. H. Hyde, E. Jones, E. P. Le Sueur, J. Thresh, T. Bamfield, J. Walker. *Pullet*.—1. H. Beldon. 2. G. & W. Duckworth, Church. 3. N. Marlor, Denton. *he*, W. A. Hyde, *he*, T. E. Jones, H. Pickles, T. Dean. *Hen* or *Pullet*.—Cup and 1. G. and W. Duckworth. 2. H. Beldon. 3. T. Dean, Keighley. *he*, J. T. Simpson, W. A. de Winton, T. Blakeman, W. A. Hyde, J. Buckley, J. Metcalfe.

HAMBURGERS.—Silver-spangled.—Cock or Cockerel.—1. N. Barter, Plymouth. 2. H. Pickles, Barb. *he*, N. Barter, H. Beldon. 3. Carr, H. Feat. *c*, G. Holt. *Hen* or *Pullet*.—Cup and 1. N. Barter, H. Beldon. 2. and 3. Miss E. Browne. *he*, N. Barter, H. Pickles, Miss E. Browne, H. Feat. *c*, G. Holt, J. Rollinson, Ashton & Booth.

HAMBURGERS.—Gold-pencilled.—Cock or Cockerel.—1. T. & W. Fawcett, Baildon. 2. H. H. Thompson, Highworth. 3. J. Walker, Ripley. *he*, H. Pickles. *he*, N. Barter, G. & W. Duckworth, H. Beldon. *Hen* or *Pullet*.—1. H. Beldon. 2. and 3. J. Walker, *he*, H. Beldon. *he*, J. Fawcett.

HAMBURGERS.—Silver-pencilled.—Cock or Cockerel.—1. H. Pickles. 2. F. W. Meynell, Derby. 3. H. Feat, Swansea. *he*, H. Beldon, R. W. Bracewell. *Hen* or *Pullet*.—1. H. Pickles. 2. H. Beldon. 3. H. Feat. *he*, F. Jagger, F. W. Meynell, R. W. Bracewell.

HAMBURGERS.—Black.—Cock or Cockerel.—1. Rev. W. Serjeantson, Acton Barnet Rectory, Shrewsbury. 2. H. Beldon. 3. H. Pickles. *he*, J. Patrick, J. Fickup, jun. *he*, W. Serjeantson, Capt. J. Bush, Bristol. *he*, W. A. Hyde. 2. and 3. *he*, Rev. W. Serjeantson. 3. J. Bush, Bristol. *he*, Mrs. W. E. George, N. Marlor, E. Leake, Capt. Mitchell, Stott & Booth.

GAME.—Black-breasted Red.—Cock or Cockerel.—Cup, 1. and 2. S. Matthew, Stowmarket. 3. Hon. and Rev. F. Dutton, Bibury Vicarage, Fairford. *he*, J. A. Mather, Mrs. G. Hall. *c*, G. H. Fitz-Herbert. *Hen* or *Pullet*.—1. S. Matthew. 2. Dr. A. Cameron, Epworth. 3. Hon. and Rev. F. Dutton. *he*, R. R. Lempiere, S. Field, Hon. and Rev. F. Dutton, W. H. Stagg, W. J. Pope.

GAME.—Brown-breasted Red.—Cock or Cockerel.—1. S. Matthew. 2. D. Harley, Edinburgh. 3. J. Voisin, Jersey. *he*, S. Field. *he*, J. Cook, H. E. Martin, J. Nelson, J. Forsyth. *Hen* or *Pullet*.—Cup and 1. S. Matthew. 2. J. T. Browne, St. Austell. 3. J. Nelson, Hexham. *he*, T. Burgess, H. E. Martin, S. Field, G. F. Ward.

GAME.—Any other variety.—Cock or Cockerel.—1. J. Voisin (Duckwing). 2. D. Harley. 3. S. Matthew (Duckwing). *he*, J. T. Browne (Duckwing). *he*, W. C. Phillips, E. Winwood, G. Lunt (Pile). *c*, G. K. Chilcott (Duckwing). *Hen* or *Pullet*.—1. J. T. Browne (Duckwing). 2. D. W. J. Thomas, Brecon (Duckwing). 3. J. Forsyth, Wolverhampton (Duckwing).

MALAYS.—Cock or Cockerel.—1. T. Leecher, Cornwall. 2. Miss A. Broeke, Shrewsbury. 3. R. Hawkins, Seaham. *he*, W. B. Payne, W. H. Sabin. *c*, E. Symons, J. Hinton, T. Joint. *Hen* or *Pullet*.—1. W. B. Payne, Shrewsbury. 2. T. B. Lowe, Leicester. 3. T. Joint. *he*, T. Joint, J. Hinton, E. Branford, Rev. N. J. Ridley.

POLISH.—Cock or Cockerel.—Cup and 1. H. Beldon. 2. G. C. Adkins, Birmingham. 3. A. & W. Silvester, Sheffield. *he*, G. C. Adkins, P. Unsworth, C. Bloodworth, W. Harvey, J. J. Scott. *Hen* or *Pullet*.—Cup and 1. G. C. Adkins. 2. A. and W. Silvester. 3. A. Darby. *he*, H. Beldon, W. Harvey, T. Leecher, T. Dean, G. C. Adkins. *he*, G. C. Adkins, J. Partington, P. Unsworth, Rev. C. W. Sheppard.

ROUDANS.—Cock or Cockerel.—1. R. B. Wood, Uttoxeter. 2. Mrs. Vallance. 3. J. J. Scott, Hanstephen. *he*, G. W. Hibbert, Mrs. Vallance. 3. W. Thomas. *c*, F. Lake, W. O. Quibell, D. Lane, W. Whitworth, jun. *c*, J. B. Mals, Rev. A. Ellis-viner. *Hen* or *Pullet*.—1. S. W. Thomas, Sketty. 2. Mrs. Vallance, Sittingbourne. 3. J. B. Mals, Horfield. *he*, D. Lane, W. H. Coppelstone, W. O. Quibell, W. Whitworth, jun. *c*, W. Hamlyn, F. Lake. *c*, D. Lane, M. H. Start, Lady Chetwynd, W. O. Quibell.

FRENCH.—Any other variety.—Cock or Cockerel.—1. W. Cutlack, jun. Littleport. 2. E. Burrell, Farringdon. 3. P. F. Le Sueur. *he*, G. W. Hibbert, Rev. J. G. B. Knight, E. Burrell. *Hen* or *Pullet*.—1. H. Stephens, Tunbridge Wells. 2. W. H. Crabtree, Levenshulme. 3. Mrs. J. Wicks, Appleby Lane. *he*, G. W. Hibbert, E. Burrell. *c*, Mrs. E. E. Llewellyn, M. H. Start, W. Cutlack, jun.

LEGHORN.—Black.—Cockerel or Cock.—1. R. J. Foster, Kingswood. 2. and 3. S. Bradbury, Gloucester. *Pullet* or *Hen*.—1 and 2. E. Brown, Newcastle-on-Tyne. 3. R. J. Foster. *he*, E. Ayre, A. Kitchen, E. M. Crook, S. Bradbury.

LEGHORN.—White.—Cockerel or Cock.—1. A. Ward, Wimpole Street, London. 2. and 3. R. R. Fowler, Aylesbury. *he*, E. Burrell. *Pullet* or *Hen*.—1. R. R. Fowler. 2. and 3. A. Ward. *he*, Rev. N. J. Ridley. *c*, E. Burrell.

MIXONCAR.—Cockerel or Cock.—1. W. Jeffries, Bridgewater. 2. and 3. J. B. W. Williams, Stoke. *Pullet* or *Hen*.—1. T. Jones, Bristol. 2. and 3. J. B. W. Williams. *he*, T. Jones, W. Jeffries, F. Blackwell, J. B. W. Williams. *c*, J. Croote.

ANY OTHER DISTINCT VARIETY.—Cockerel or Cock.—1. H. Beldon. 2. T. Aspden, Church (Creal Cochins). 3. H. Ferris, Churehill (Silky). *Pullet* or *Hen*.—1. N. Cook (Cuckoo Cochins). 2. H. Beldon. 3. A. Darby (Silky). *he*, Miss A. Broeke (Indian Jungle). 2. A. Bond (Sultan). 3. Aspden (Creal Cochins). 3. H. Fry (Andalusian). 3. Metcalfe (Cuckoo Cochins). *c*, T. Aspden (Creal Cochins). 3. C. Wood (Cuckoo Cochins).

SELLING CLASS.—Dorkings, Cochins, or Brahmaz.—Cockerel or Cock.—1. J. Rock, Lichfield (White Cochins). 2. T. F. Ansell (Brahma). 3. W. H. Crabtree (Cochins). 4. Rev. G. Watson, Lymington (Light Brahma). *he*, C. H. Wolff, E. Pritchard (Dark Brahma). *he*, A. Sperrin (Dorking). 3. Miss E. Williams (White Dorking). 3. W. Beachey (Dorking). H. Beal (2). Mrs. Bidder (Partridge Cochins). W. A. Burnell (Cochins). H. Tomlinson (Buff Cochins). Capt. T. S. Robin (Buff Cochins). J. Turner (Black Cochins). R. P. Percival (Cochins). J. Shrimpton (Cochins). J. Turner (Black Cochins). R. P. Percival (Cochins). J. Turner (White Cochins). C. Sidgwick (Cochins). Mrs. A. Tindal, H. Yardley, H. W. Lord-Cameron, H. B. Morrell (Brahma). J. F. Smith (Brahma). T. H. May (Dark Brahma). J. Evans (Brahma). W. H. Ward (Dark Brahma). Miss L. Cotes (Dark Brahma). B. B. Glover (Dark Brahma). H. Feat. *c*, H. A. Rigg (Dorking). H. J. Jenner (Cochins). G. H. Procter, M. Leno (Buff Cochins). J. Evans (Brahma). Miss L. Cotes (Dark Brahma). H. C. White (Light Brahma). T. H. Turner (Dark Brahma). Rev. N. J. Ridley (Light Brahma).

SELLING CLASS.—Dorkings, Cochins, or Brahmaz.—Hens or Pullets.—1. J. N. Whitehead, Bridgewater (White Cochins). 2. W. A. Burnell (Cochins). 3. T. Wakefield, Newton-le-Willows (Brahmas). 4. H. B. Morrell, Caemawr (Brahmas). *he*, A. Sperrin (Dorkings). Rev. H. F. Hamilton (Dorking). W. H. Denton (Dorking). M. Leno (Buff Cochins). H. Tomlinson (Cochins). J. Turner (Black Cochins). W. H. Crabtree (Cochins). Capt. T. S. Robin (Buff Cochins). W. Whitworth, jun. (Cochins). W. A. Burnell (Cochins). Mrs. Bidder (Partridge

Cochins). Hon. M. W. Sugden (Cochins). T. H. Turner, Mrs. Bidder (Buff Cochins). Mrs. A. Tindal, H. Yardley, H. Feat. M. Leno (Brahma). F. Ansell (Brahmas). M. Leno (Brahmas). T. Webb (Light Brahma). H. B. Morrell (Brahmas). M. Leno (Brahmas). J. Brookwell (Dark Brahma). J. Turner (Light Brahma). B. B. Glover (Dark Brahma). W. Tidd (Light Brahma). T. Pomfret (Dark Brahma). W. Tidd (Light Brahma). Rev. G. Watson (Dark Brahma). Rev. J. D. Peake (Brahmas). C. H. Tomlinson (Cochins). D. Moulson (Cochins). H. Yardley, W. T. Sorer (Light Brahma). H. C. White (Light Brahma). G. and W. Smith (Light Brahma). W. H. Ward (Dark Brahma). W. Tidd (Light Brahma). Rev. G. Watson (Light Brahma). C. H. Wolff (Brahmas).

SELLING CLASS.—Any other variety except Bantams.—Cockerel or Cock.—1. C. H. Wolff, Altrincham. 2. A. Fidler, Bristol (Spanish). 3. J. Hinton, Warminster. *he*, H. Ellis (Spanish). T. Bamfield (Spanish). F. Jagger (Silver-pencilled Hamburg). Hon. H. Ponsoby (Golden-pencilled Hamburg). J. Forsyth, W. H. Huxtable (Malay). H. Feat. H. Ferris. *c*, T. Bush (Black Hamburg). Mrs. E. E. Llewellyn (Crève). Capt. T. S. Robin (Houdan). J. K. Fowler (Houdan).

SELLING CLASS.—Any other variety except Bantams.—Pullets or Hens.—1. J. Hinton. 2. T. Bamfield, Clifton (Spanish). 3. C. H. Wolff (Brown Reds). *he*, Mrs. E. E. Llewellyn (Sultans). *he*, A. Darby, J. Croote (Minoras), Miss E. Browne (Silver-spangled Hamburgs). T. Bush (Black Hamburgs). E. Leake (Black Hamburgs). Rev. W. Serjeantson (Black Hamburgs). H. Feat. G. Prentice (Black Hen). N. J. Ridley (Malaya). Miss P. Galloway, W. G. Patchett (Crève). A. P. Byford (Sultans). G. F. Whitehouse (Golden-spangled Hamburgs). T. Reeves (Golden-pencilled Hamburgs). S. Crowther (Polish). Hon. M. Sugden (Polish). Mrs. E. E. Llewellyn (Crève). H. Feat. Rev. A. Ellis-viner (Houdans). T. A. Bond (Sultans). J. Frewer.

BANTAMS.—Black-breasted and other Reds.—1 and Cup, R. Brownlie, Townend. 2. W. F. Addie, Ashton-on-Ribble. 3. S. Beighton, Farnfield. *he*, J. Anderson, W. Hodgson, W. Hodgson. *c*, J. R. Robinson.

BANTAMS.—Game, any other variety.—1. R. Brownlie. 2. S. Beighton. 3. J. Nelson. *he*, J. R. Robinson, W. Hodgson, W. White, E. Payne. *c*, J. Marsden.

BANTAMS.—Black, Clean-legged.—1. Miss M. M. Francis, Romford. 2. T. Bush. 3. W. H. Shackleton, Bradford. *he*, H. Draycott, J. F. Smith, J. Walker, W. Harvey, W. White, R. H. Ashton. *c*, C. H. Poole, H. Beldon, W. White, R. O. Anwyl.

BANTAMS.—Gold and Silver Sebrights.—1. Cup, and 2. M. Leno. 2. J. W. Lloyd, Kingston. *he*, Rev. F. Tearle, J. W. Lloyd. *c*, E. Pritchard.

BANTAMS.—White, Clean-legged.—1. Rev. F. Tearle, Gazeley Vicarage, Newmarket. 2. H. Beldon. 3. H. Draycott, Leicester. *he*, T. Green. *c*, J. Bloodworth.

GAME BANTAMS.—Cock.—1 and Cup, R. Y. Ardagh, Worcester. 2. R. Brownlie. 3. W. F. Addie. *he*, J. Nelson. *he*, J. Nelson, E. Payne, G. Gibson.

GAME BANTAMS.—Cockerel.—1. J. G. Holloway, jun. Stroud. 2. T. Bush. 3. W. Hodgson. *he*, M. Leno, F. C. Wood. *c*, R. Wood. *Hens*.—1 and 2. J. Mayo, Gloucester. 3. M. Leno. *he*, H. Feat. *c*, J. W. Lloyd, M. Leno.

DUCKS.—White Aylesbury.—1. J. K. Fowler. 2. J. Walker. 3. H. Feat. *Rouen*.—Cup and 1. J. Walker. 2. W. Evans, Prescot. 3. P. Unsworth, Newton-le-Willows. *he*, W. Evans, J. N. C. Pope, W. F. Harvey, P. Unsworth, W. Stephens, P. Ogilvie, T. H. Turner, F. Parlett. *Black East Indian*.—Cup and 1. J. W. Kelleway, Isle of Wight. 2. J. S. Sainsbury, Devizes. 3. S. Burn, Whitby. *he*, G. S. Sainsbury, J. Walker, J. W. Kelleway. *Any other variety*.—Cup, 1. and 2. J. Walker. 3. W. Boucher, Notting Hill, London.

GREENS.—1. J. K. Fowler. 2. J. Birch, jun. Liverpool. 3. W. Tippler, Roxwell. *he*, W. E. George, Dr. E. Snell.

TURKEYS.—1. W. Wykes, Hineckley. 2. and 3. Rev. N. J. Ridley, Newbury. *he*, H. C. Lippincott.

PIGEONS.

CARRIERS.—Black or Dun.—Cock.—1 and Cup, J. Baker, Kew Bridge, London. 2. H. M. Maynard, Ryde. 3. R. Fulton, Brockley, London. *he*, G. Kempton, R. Fulton. *he*, J. Baker, G. S. Hockey, H. Yardley, H. M. Maynard, R. Fulton, G. F. Whitehouse. *Hen*.—1. R. Fulton. 2. H. M. Maynard. 3. J. Baker. *he*, R. Fulton. *he*, H. M. Maynard, G. Kempton, G. S. Hockey. *c*, G. Kempton, J. Baker.

CARRIERS.—Any other colour.—Cock.—1. W. Massey, Spalding. 2. E. C. Stretch, Ormskirk. 3. J. Baker. *he*, H. Jacob. *he*, R. Fulton. 3. J. Baker. *Hen*.—1. G. Bentley, Rickmansworth. 2. R. Fulton. 3. J. Baker. *he*, E. C. Stretch, J. Baker, W. Harvey. *c*, R. Cant.

CARRIERS.—Young Cock.—1 and Cup, W. Siddons, sen., Aston. 2. and 3. R. Fulton. *he*, R. Fulton, H. M. Maynard (2), Mrs. S. H. Carter, H. Jacob, J. Baker. *Hen*.—1. G. Kempton, Fackington Street, London. 2. H. M. Maynard. 3. R. Fulton. *he*, G. Kempton. *he*, W. Massey, H. Fulton (2). *c*, H. M. Maynard, H. Jacob.

POSTERS.—Black or Blue.—Cock.—1. T. Bullen, Liverpool. 2. J. Baker. 3. L. & W. Watkin, Northampton. *he*, J. Baker. *c*, T. Bullen, R. Fulton. *Hen*.—1 and Cup, T. Bullen. 2. R. Fulton. 3. J. Baker. *he*, R. Fulton (2), J. Baker. *c*, T. Bullen.

POSTERS.—Any other colour.—Cock.—1. L. & W. Watkin. 2. *he*, and *he*, R. Fulton. 3. and *he*, J. Baker. *Hen*.—1, 2, and *he*, R. Fulton. 2. Mrs. Ladd, Calne.

TUMBLERS.—Almond.—Cock or Hen.—1 and *he*, J. Baker. 2. and 3. R. Fulton. *he*, R. Cant, H. Yardley. *Any variety of Short faced.—Cock or Hen*.—1 and 2. J. Baker. 3. H. Yardley, Birmingham. *he*, R. Cant, J. Baker, R. Fulton. *c*, R. Fulton.

OWLS.—Foreign.—Cock or Hen.—1. R. Fulton. 2. F. Brand, Bideford. 3. J. Baker. *he*, F. Brand, F. Beck. *c*, F. Beck, J. Baker.

BARBS.—Cock.—1 and 2. H. M. Maynard. 3. R. Fulton. *he*, H. Yardley. *he*, J. Baker. *Hen*.—1 and Cup, H. M. Maynard. 2. H. Yardley. 3. R. Fulton. *he*, T. Charnley.

BARBS.—Young Cock or Hen.—1. Cup, and *he*, T. Charnley, Blackburn. 2. R. Fulton. 3. J. P. Mills, Exeter. *c*, H. M. Maynard.

TRUMPETERS.—Cock or Hen.—1. J. Lederer, Bootle. 2. W. Harvey, Sheffield. 3. *he*, and *he*, R. Fulton. *c*, J. Baker.

NACRES.—Cock or Hen.—1. J. Heath, Calne. 2. J. Baker. 3. R. Fulton. *he*, R. Fulton, J. Baker. *he*, O. E. Cresswell, J. Merriock. *c*, H. M. Maynard. *Any other colour.—Cock or Hen*.—1 and 2. J. Baker. 3. R. Fulton.

FANTAILS.—Cock or Hen.—1. Rev. W. Serjeantson. 2. J. Walker. 3. E. Horner. *he*, J. Baker. *he*, H. M. Maynard (3). J. Walker. *c*, H. Yardley.

W. A. Bryson. 2, J. M'Nab, Belfast. 3, J. M'Laren, Greenock. 4, G. Grant, Glasgow. 5, W. Thom.
PREMIER BUFF.—Cock.—1, J. M'Nab. 2, J. Smith. 3, T. Scott, Carlisle. 4, R. Bryson. 5, N. M'Lean, Glasgow. **Hens**.—1, T. Scott. 2, J. M'Laren. 3, J. Lashlan, Kilmarnock. 4, W. Thom. 5, J. Ferris.
FOAM.—Yellow or Buff.—Cock.—1, T. Cooper, Carlisle. 2, R. Baxter, Bath. 3, D. Duncan, 4, G. Grant. **Hens**.—1, and special, A. Steel, Glasgow. 2, J. W. Bryson, Paisley. 3, P. M'Donald, Glasgow. 4, H. Archibald, Dairy.
GREEN.—Yellow or Buff.—Cock.—1, J. Pettigrew. 2, W. Thom. 3, W. M'Intyre. 4, J. Knox. **Hens**.—1, H. Webster, Kilmarnock. 2, J. Kelly, Paisley. 3, T. Cooper. 4, B. White, Paisley.
GOLDEN PHEASANT.—Yellow or Buff.—1 and 2, J. Thorpe, Dumfries. 3, J. Black. 4, J. M'Pherson.
GOLDEN PHEASANT.—Cock.—1 and 2, T. Revis, Glasgow. 3, D. M'Kay, Paisley. 4, W. Arthur, Paisley.
HENS OF FOKKING BIRD.—1, W. Whitehead, Paisley (Cockatoo). 2, W. Clark, Machan, Larkhall. 3, R. M'Pherson, Govan. 4, J. M'James, Paisley.

ABERDEEN CANARY SHOW.

The twentieth annual Exhibition of the Bon-Accord Ornithological Society took place at the Music Hall Buildings on Friday and Saturday last, the 31st of December and 1st of January. The entire arrangements were admirable, and reflect the greatest credit to those who had the arranging and carrying out the Exhibition, which was the best yet held in Aberdeen. The weather was beautifully fine, and many were induced to visit the Exhibition.

About 840 birds were shown for competition alone, and two well-known exhibitors from Sunderland and Norwich entered freely, although the distance was so great. Another case of a painted or artificially-coloured Norwich Canary turned up, the exhibitor being James Blair, of 111, Hadden Street, Woodside, Aberdeen. We are determined to expose all cases of this kind, with a view to check the abominable practice. The following are the awards:—

COMPETITION CONFINED TO MEMBERS OF THE SOCIETY.

BELGIANS.—Clear or Ticked Yellow.—Cock.—1 and 2, J. Coutts. 3 and 4, R. Sutherland. **who**. A. Black. **he**. A. Black. J. Blair. J. Coutts. **Hens**.—1, 2, and 3, R. Sutherland. **who**. J. Blair. **he**. J. Coutts (2).

BELGIANS.—Clear and Ticked Buff.—Cocks.—1, J. Blair. 2, J. Duff. 3 and **who**. R. Sutherland.

NORWICH.—Clear Yellow.—Cocks.—1 and **who**. J. Bisset. 2 and 3, G. Chalmers. **Hens**.—1, F. Lyon. 2 and **he**. W. Silver. 3, J. Duff.

NORWICH.—Clear Buff.—Cocks.—1, J. Bisset. 2, 3, and 4, G. Chalmers. **who**. W. Silver. **he**. G. Chalmers. J. Bisset. F. Lyon. **Hens**.—1, J. Taylor. 2 and 3, W. Silver. **he**. W. Silver (2). J. Bisset.

NORWICH.—Marked Yellow.—Cock or Hen.—1 and 2, W. Silver. 3, A. Smith. **Variegated Yellow.—Cock or Hen**.—1 and 2, J. Taylor. 3, A. Gordon. **he**. W. Silver. A. Gordon.

NORWICH.—Marked Buff.—Cock or Hen.—1, G. Ross. 2 and 3, F. Lyon. **Variegated Buff.—Cock or Hen**.—1, P. Lyon. 2, G. Chalmers. 3, J. Blair. **he**. J. Taylor. 4, J. Duff.

CHRYSTED.—Yellow or Yellow Marked.—1 and 2, G. Ross. 3, J. Bisset. **Buff or Buff Marked**.—1, 2, and **who**. W. Silver. 3, J. Bisset.

GREEN.—Cock or Hen.—1, 2, and **he**. A. Gordon. 3, F. Lyon. **SCOTCH FANOT.—Clear or Ticked**.—Cocks. 1, 2, 3, and **who**. F. Lyon. **Hens**.—1, 2, and **he**. F. Lyon. 3, J. Coutts.

LIRANDS.—Golden-spangled.—Cock or Hen.—1, 2, and 3, J. Coutts.

CURMASON.—Jonque.—Cock or Hen.—1, **he**. and 4, F. Lyon. 2 and 3, G. Ross. **Buff.—Cock or Hen**.—1 and 2, G. Ross. 3 and 4, J. Duff.

GOLDEN PHEASANT.—Cocks.—1 and 2, A. Black. 3, J. Taylor.

OPEN TO ALL COMERS.

BELGIANS.—Clear or Ticked Yellow.—Cocks.—1, 2, and **who**. J. Rutter. 3, J. Coutts. **he**. J. Blair. R. Sutherland. **Hens**.—1, 2, 3, and **who**. J. Rutter.

BELGIANS.—Clear or Ticked Buff.—Cocks.—1 and 2, J. Rutter. 3, R. Sutherland. **who**. J. Rutter. R. Sutherland. A. Barnett. W. Dean. **Hens**.—1 and **he**. J. Rutter. 2, A. Barnett. 3, R. Sutherland. **who**. J. Rutter (2). W. Wilson. 3, Duff.

BELGIANS.—Variegated.—Cocks.—1, 2, 3, and **who**. J. Rutter. **Hens**.—1, 2, and **who**. J. Rutter. 3, R. Sutherland.

NORWICH.—Clear Yellow.—Cocks.—1, D. Langlands. 2, A. E. Langlands. 3, W. B. Howell. **who**. J. Balfour. **he**. W. Silver. A. Gordon. G. Watson. W. B. Howell. 4, T. L. Mitchell, P. Lyon. **Hens**.—1 and **he**. W. B. Howell. 2, J. Balfour. 3, G. Chalmers. 4, J. Bisset.

NORWICH.—Clear Buff.—Cocks.—1 and 2, W. B. Howell. 3, J. Bisset. **who**. J. Bisset. J. Taylor. **he**. G. Chalmers. J. Davidson. J. Hood. J. Balfour. 4, W. Silver. **Hens**.—1, B. Langlands. 2, G. Watson. 3 and **who**. W. B. Howell. **he**. W. Silver. J. Balfour. 4, W. Silver.

NORWICH.—Marked Yellow.—Cock or Hen.—1, W. Silver. 2, J. Balfour. 3, A. Gordon. **he**. J. Bisset. **Variegated Yellow.—Cock or Hen**.—1, W. B. Howell. 2, G. Chalmers. 3 and **who**. J. Balfour.

NORWICH.—Marked Buff.—Cock or Hen.—1 and 2, J. Balfour. 3, J. Blair. **he**. J. Bisset. **Variegated Buff.—Cock or Hen**.—1 and 2, W. B. Howell. 3 and **who**. J. Balfour.

CHRYSTED.—Yellow or Yellow Marked.—1 and 2, W. B. Howell. 3, G. Watson. **who**. J. Hood. J. Balfour.

CHRYSTED.—Buff or Buff Marked.—1 and 2, W. B. Howell. 3, J. Balfour. **who**. W. Silver. W. B. Howell (2). 4, J. Bisset. W. Dean.

GREEN.—Cock or Hen.—1, A. Smith. 2, W. B. Howell. 3, J. Bisset. **SCOTCH FANOT.—Clear or Ticked**.—Cocks. 1, J. Taylor. 2, P. Lyon. 3, W. Dean. **he**. J. Davidson. **Hens**.—1 and 2, S. M'Donnell. 3, J. Taylor. **he**. J. Davidson.

CURMASON.—Jonque.—Cock or Hen.—1, W. B. Howell. 2, P. Lyon. 3, J. Balfour. **who**. W. B. Howell. **Cock or Hen**.—1 and 2, J. Balfour. 3, W. B. Howell. 4, P. Lyon.

GOLDEN PHEASANT.—Cocks.—1, Capt. J. Gordon. 2, A. Cameron. 3, J. Donald.

BRITISH BIRDS.—Goldfinches.—1, A. Burns, Jun. 2, J. Davidson. 3, J. Taylor. **who**. W. Wilson. **Bullfinches**.—1 and 2, W. Dean. 3, D. Legget. **Robins**.—1 and 2, J. Gillies. 3, A. K. Barnett. **Linnet**.—1, W. Dean. 2 and 3, A. Gordon.

SPECIAL PRIZES.

Ladies' Cup for best bird in Section I, gained by R. Sutherland.
 B. Reid & Co.'s prize of One Guinea for the best Yellow Belgian in Section I, gained by R. Sutherland.
 Society's Cup for most points in Section I, gained by P. Lyon.

James Cocker & Sons' prize of 7s. 6d. for second in points, Section I, gained by W. Silver.
 Society's Cup for most points in Section II, gained by W. B. Howell.
 Silver Medal from the Members for best Don in the Exhibition, gained by P. Lyon.
 Silver Medal from the Members for best Goldfinch Male in the Exhibition gained by Capt. J. Gordon.
 Silver Medal from the Members for best Goldfinch in the Exhibition, gained by A. Burns, Jun.
 Silver Medal from a Member for best Bullfinch in the Exhibition, gained by W. Dean.

JUDGE.—Mr. G. J. Barnesby, Derby.

THE PRIZE CHESHIRE WAX-GUIDE-MAKING MACHINE.

ONE of the most useful of the new inventions at our late apianian exhibition was the above little contrivance, for which a silver medal was awarded; and as the long winter evenings are now upon us, and preparations for the next year's harvest should be in hand, I will endeavour to figure and describe this ingenious contrivance. Fig. 1 is a cross-section of the whole. A, A platform of 1-inch deal not less than 6 inches broad, and for Woodbury frames 14 inches long; B is a similar piece fixed on A at right angles—this should be about 8 inches high, and the same length as A; C is a sine pan 1 inch high, 24 broad, and 18 long, filled with water; D is a block of fine plaster of Paris about 3 inches high, 1½ broad, and 12½ long. The top of this block in Mr. Cheshire's machine is a cast of the foundations of worker comb; but I have no doubt a plain surface will answer equally as well. E is the top bar of the frame to be waxed,

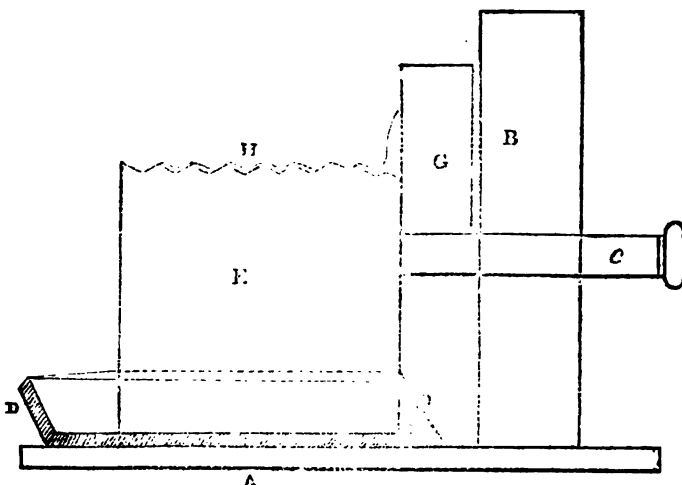


Fig. 5.—Cross-section of Mr. Cheshire's Wax-guide-making Apparatus.

placed on edge between B and C, touching the former, and with its medial line flush with the top of B. The frame is supported in this position by two or three pins through B, as C holes may be bored through B at various heights in order to accommodate frames with top bars of different widths.

All being now in position the plaster block becomes damp

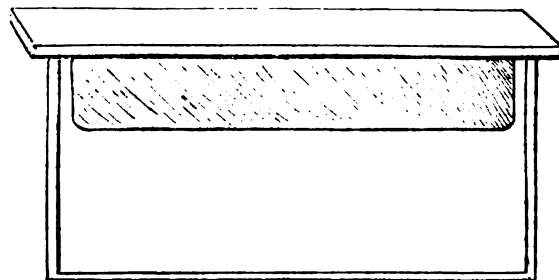


Fig. 6.—Frame with Wax Guide attached.

throughout its substance by capillary attraction of the water. Some wax is now melted in a common glue-pot, and with a brush is painted on the top surface of B, extending on to the front face of C, as B the wax cools instantly, firmly adheres to the dry wood but not to the damp plaster, and the frame may be at once lifted with a straight wax guide made and fixed. A depth of 1½ inch will be found quite sufficient, and the bees will fashion the strip of wax into beautiful straight comb, and continue it downwards in the same form. When everything is ready a

man may easily supply guides to a hundred frames in an hour.—
JOHN HUNTER, *Eaton Rise, Ealing.*

THE WONDERS OF A BEE HIVE.—No. 2.

My first letter on this subject touched the fact that both the sovereign and subjects of a bee hive are produced and producible from the same kind of eggs. Though both are hatched from one kind of eggs they are not treated alike, or hatched in the same kind of cells. The cells in which queens are reared are indeed regal palaces compared to the cells of working bees. Royal cells occupy much more space, are very differently constructed, and with a great expenditure of wax. Royal cells are vertical in form, and, therefore, queens are reared and hatched with their heads towards the floor-board, whereas workers are reared and hatched in horizontal cells built closely together, with the smallest possible expenditure of wax.

Eggs in royal cells become worms (very small maggots) in three days, when they may be easily seen floating in a milk-like substance at the bottom of the cells. The royal infants grow uncommonly fast for five days, completely filling their cradles by the end of that time, when the bees put beautiful lids over them, thus sealing them up. In about six or seven days more (fourteen altogether) they come to maturity. But before they are born the tragedy of their life begins, and a wonderful tragedy it is. When an old queen dies or goes away with a swarm the bees invariably rear more than one queen; generally speaking they rear from three to five queens, and sometimes more. They come to perfection about the same time, and with dispositions to fight and murder one another. These princesses have no sisterly feelings, and can brook no rivals. The one first matured in her cell gives distinct intimation before she is born that she will claim the throne of the hive by uttering some strange and peculiar sounds. She calls "off, off, off," again and again, and as her calls and claim remain unchallenged she pushes the coverlet of her cradle-cell aside, and with a dignity becoming royalty asserts herself the queen of the hive. She is heartily welcomed by the community, and is received and recognised as their rightful sovereign. The sister princesses speedily come to maturity, and begin to call "off, off," in their cells. These sounds indicate rivalry and opposition, which much provokes the reigning queen, and makes her run to and fro and up and down the hive with unquenchable deadly hate and murderous intentions. She now calls "peep, peep," first in one place and then at another; meanwhile her sisters accept her challenge by repeating their "off, off," from their cells. This "piping" of the queen and princesses is a wonderful feature in the history of bees. What is it for? Who can explain or understand it? It is doubtless a wise and necessary arrangement in the economy of bees, though its mysteries are too deep for the limited powers and perception of men.

The piping of queens, if continued, heralds the departure of second and third swarms from hives. The queen is often called "the sovereign," and the bees "the subjects;" but it should be known that the monarchy of a bee hive is a very limited one, for the working bees sit in the highest council chamber and there decide the destinies of the community, including even the birth, life, and death of queens. Very well; when the bees decide that second swarms will not be sent off they speedily stop the piping. The princesses are killed in their cells and cast out of the hive. If swarming be decided on in the high council the piping is continued for three days and nights, when, weather permitting, a second swarm issues from the hive. We have known a case of continued piping for seven days. The queen and princesses kept answering one another constantly for a whole week, night and day. The bees kept the reigning queen from attacking the princesses (unborn), and they were secured, watched, and confined to their cells like dogs to their kennels. And never did dogs bark so continuously as did these confined queens. Just one word in passing on the fact that these young creatures found no time for sleep during the whole week. Sleep is impossible to queens during the piping season. If they can do without sleep then when are they more likely to require it?

The interesting incidents—the fuss and pageantry connected with the introduction of queens to the world—are numerous and difficult to describe. Queens have stings, blunt and curved, which they never use but in royal battles. No amount of provocation or pressure by human hands ever cause them to use their stings. Human breath is most offensive to working bees, but queens may be safely rolled under the tongue and held in the mouth of any person. I shall leave this part of my subject by giving the reader an account of a royal battle seen and described by a lady. "The bees had built six queen cells, and in about twelve days the first queen was hatched. As soon as she was fairly born she marched rapidly, and in the most energetic manner, over the combs, visited the other cells in which were the embryo queens, and seemed at times furious to destroy them. The workers, however, surrounded her, and prevented such wholesale murder. For two days she was intent upon her fall purpose, kept in almost continuous motion to

effect it. On the fourteenth day the second queen was ready to come out, piping and making noises to attract attention. A part of the bees then seemed to conclude that it was time to take the first queen with them and swarm, but by some mistake she remained in the hive after the swarm had left. The second queen left her cell soon after the swarm had gone, and now there were two hatched queens in the hive. The workers were in a state of great uneasiness and commotion, seeming impatient for the destruction of one of them. The queens met, and the combat commenced in which one was to gain her laurels and the other to die. The battle was fierce and sanguinary. They grappled each other, and, like expert wrestlers, strove to inflict the fatal blow. For some moments the parties seemed equally matched. The bees stood looking calmly on the dreadful struggle. The battle, like all others, had its close; one fell on the field, and was immediately taken by the workers and carried out of the hive. The swarm was hived, but being without a queen, came rushing back, but was not in time to witness the fatal struggle."

The life of a queen bee to the community is of inestimable value. See what care and labour are bestowed in constructing royal cells; what a short time is required to hatch princesses; what peace and joy reign in a hive possessing a healthy queen; what affection is manifested for her by the bees—their uneasiness when she is out of their sight—their wall of lamentation when she is lost—their utter hopelessness, ruin and collapse when they have no eggs wherefrom to raise a successor!—
A. PETTIGREW.

METEOROLOGICAL OBSERVATIONS.

CANNON SQUARE, LONDON.

Lat. 51° 38' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	8 A.M.					IN THE DAY.					Rain.
	Barom- eter at sea and bar.	Hygrom- eter.		Direction of Wind.	Temp. of air at 5 miles off.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1875-6.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Dec. and Jan.											
We. 29	30.488	48.4	42.5	W.	42.5	42.5	42.5	42.5	40.1		
Th. 30	30.510	44.0	42.7	W.	42.6	42.4	42.6	41.2	41.7	0.010	
Fri. 31	30.194	43.0	39.8	S.S.W.	42.6	42.1	40.5	45.2	47.5		
Sat. 1	29.986	46.0	45.0	S.W.	42.4	47.8	41.3	48.8	45.5	0.158	
Sun. 2	31.192	38.0	38.0	S.E.	42.4	49.3	39.1	48.9	25.3	0.134	
Mo. 3	30.111	51.5	51.8	N.W.	41.8	54.5	37.4	61.0	53.8		
Tu. 4	30.276	44.5	44.8	N.	42.5	49.3	31.9	60.7	53.2		
Means	30.315	45.6	42.7		42.3	45.5	37.9	53.7	46.0	0.028	

REMARKS.

29th.—Fine morning, but no sun; overcast at night.
30th.—Dull and overcast throughout the day; very calm.
31st.—Generally dull, but bright sun at intervals; cloudy at night. On the whole the finest day in the week.
1st.—Dark, damp, and thick all day, with rain at and after 11 A.M. The temperature unusually steady.
2nd.—Rain at intervals all day, and at times very dark; rain also during the night.
3rd.—A little rain before 9 A.M. A warm damp day, a fine sunset, and starlight night.
4th.—Very dark early; rather bright for a short time about noon; damp and thick till 6 P.M., and then much finer.
The most remarkable feature of the week is the equability of the air temperature. From 9 A.M. on 26th to 9 P.M. on the 1st it only varied from 40.5° to 47.8°.—G. J. SYMONS.

COVENT GARDEN MARKET.—JANUARY 5.

No recovery from last week, with the exception of late sorts of Peas, for which a good demand is now being felt. Some very fine samples of St. Michael Pines are now to be seen in the market, completely spoiling the sale of English ones.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	2	0	Peaches.....	dos.	0	0	0
Chestnuts.....	12	0	3	0	Pears, Kitchen.....	dos.	0	0	0
Figs.....	dos.	0	0	0	Pears, dessert.....	dos.	2	0	0
Filberts, Cobs.....	lb.	0	5	0	Pine Apples.....	lb.	2	0	0
Grapes, hothouse.....	lb.	2	0	0	Strawberries.....	lb.	0	0	0
Lemons.....	100	6	12	0	Walnuts.....	100	1	0	0
Oranges.....	100	6	12	0	ditto.....	100	4	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	0	10	0	Lettuce.....	dozen	0	8	0
Asparagus.....	100	0	10	0	French Cabbage.....	1	0	1	0
Beans, Kidney.....	1	0	0	0	Mushrooms.....	pot.	1	0	0
Beet, Red.....	dozen	1	6	0	Mustard & Cress.....	pot.	0	2	0
Broccoli.....	dozen	0	9	0	Onions.....	dozen	2	0	0
Brussels Sprouts.....	1	0	0	0	Pickling.....	dozen	0	6	0
Cabbage.....	dozen	1	0	0	Parsley.....	dozen	2	0	0
Carrots.....	dozen	0	10	0	Peas.....	dozen	0	0	0
Cauliflower.....	100	1	0	0	Potatoes.....	dozen	0	0	0
Celery.....	dozen	2	0	0	Spinach.....	dozen	2	0	0
Coleworts.....	dozen	2	0	0	Radishes.....	dozen	1	0	0
Cucumbers.....	each	1	0	0	Rhubarb.....	dozen	0	0	0
Endive.....	dozen	1	0	0	Salsify.....	dozen	0	9	0
Fennel.....	dozen	1	0	0	Sour-kraut.....	dozen	1	0	0
Garlic.....	lb.	0	6	0	Shallots.....	dozen	1	6	0
Herbs.....	dozen	0	8	0	Spinach.....	dozen	2	0	0
Horseradish.....	dozen	4	0	0	Tomatoes.....	dozen	3	0	0
Leeks.....	dozen	0	4	0	Turnips.....	dozen	0	4	0
					Vegetable Marrows.....	dozen	0	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JANUARY 18—19, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.			
13	Th	Royal Society at 8.30 P.M.	48.0	33.3	38.2	8	4	4	14	7	18	9	43	17	9	18
14	F	Queckett (Microscopical) Club at 8 P.M.	49.1	29.9	36.0	8	3	4	15	8	43	9	59	18	9	22
15	S		41.7	28.9	35.3	8	2	4	17	10	8	10	10	19	9	43
16	SUN	2 SUNDAY AFTER EPIPHANY.	49.0	31.0	38.5	8	1	4	19	11	20	10	31	20	10	4
17	M	London Institute, 5 P.M. Victoria Institute, P.M.	42.6	28.7	35.6	8	0	4	20	moor.	10	31	21	(10	24
18	Tu	Zoological Society at 8.30 P.M.	49.6	31.8	38.9	7	59	4	22	0	35	10	44	(10	43
19	W	Royal Horticultural Society—Fruit and Floral Committee at 11 A.M.	43.1	30.6	36.9	7	58	4	23	1	50	10	57	23	11	1

From observations taken near London during forty-three years, the average day temperature of the week is 42.4°; and its night temperature 39.9°.

THE MISTLETOE AND ITS CULTURE.

[This is the first part of a communication to the Maidstone Gardeners' Mutual Improvement Association by its Secretary, Mr. J. Kentish. The second part on the Holly will follow.]



HE Mistletoe is, as you are aware, an ever-green parasitical bush, found very rarely growing upon the Oak, but principally upon Apple trees, and in England is therefore more common in our cider counties. It is found on the Lime trees in Buckinghamshire, and on the Black Poplar in Surrey. In Jerusalem and Spain it is found on the Olive tree. The roots of the Mistletoe penetrate the bark of the tree on which it grows,

and extend themselves between the inner bark and the soft wood where the sap is most abundant. The roots of the Mistletoe, as the tree on which it grows advances in growth, become embedded in the solid wood. The root, however, in no way unites with the tree, save for the purpose of feeding its own plant from the sap; thus the effect of the Mistletoe upon the tree must be to injure the branch, particularly the part beyond the Mistletoe. This parasitical plant absorbs the ascending and descending sap and gives nothing in return; it solely robs, and is on that account not liked in orchards. This, I said, is a parasitical plant—i.e., it not only lives on another, but maintains its life by robbing of its sap the tree on which it grows; it is therefore more hurtful than many other plants growing on trees, which are termed Epiphytes, the difference being that these derive their nutriment from the decay of the outer bark or from the atmosphere.

One writer states that there are two experiments which remain to be tried with Mistletoe—1st, Can it be propagated by inserting cuttings in the live bark in the manner of buds or grafts? 2nd, Whether a plant of Mistletoe would keep alive the tree on which it grows after that tree was prevented from producing either leaves or shoots? The Mistletoe is seldom known to cease growing while the tree is alive, but when the tree dies the Mistletoe dies also. The method of propagating is by the berries, they being made to adhere to the bark of a living tree. The common agency by which this is effected is supposed to be by birds, especially the missel thrush, which after having satisfied itself by eating the berries wipes off such of them as may adhere to the outer part of its beak against the branch of the tree on which it has alighted, and so some of the seeds are thus left sticking to the bark. Aristotle and Pliny among the ancients, and Dr. Walker among the moderns, considered that the Mistletoe was propagated by the excrement of the birds which had fed on the berries, supposing that the heat of the stomach and process of digestion were necessary to prepare the seeds for vegetation. They first suggested the idea of trying by experiment whether the seeds would vegetate without passing through the body of a bird; and at his suggestion Mr. Doody, an apothecary of London, inserted the seed of the Mistletoe into the bark of a White Poplar tree, which grew in his garden, with complete suc-

cess. This, Professor Martin observes, has been since done by many persons, both by rubbing the berries on the smooth bark of various trees and by inserting them in a cleft, or in a small hole bored on purpose, which was the mode adopted by Doody. Mr. Baxter, of the Oxford Botanic Gardens, in the spring of 1833 rubbed nine Mistletoe seeds on the smooth bark of an Apple tree, all of which germinated. Two produced only one radicle each, six produced two radicles each, and one produced three; from which it follows that two radicles are more common than one. In the seeds of the plant there are as many embryos as radicles. The celebrated Du Hamel arguing that the seeds of the Mistletoe like the seeds of other plants would germinate anywhere, provided they had a suitable degree of humidity, made them sprout, not only on the barks of different kinds of living trees, but on dead branches—on bricks, tiles, stones, the ground, &c. But though they germinated in these situations they did not live any time, except on the bark of living trees. M. Du Trochet made seeds of the Mistletoe germinate on the two sides of the frame of a window, and in both cases the radicles directed themselves towards the interior of the room as if in quest of darkness. The first indication of germination is the appearance of one or more radicles. I also learn that Mistletoe can be easily propagated on Thorns, or Crab Apples planted in pots for the convenience of removal. The berries of the Mistletoe, and also of Holly, are used for making birdlime, but differences of opinion exist as to which make the best.

Mistletoe used at one time to be used in England as a remedy for epilepsy, but it is not now used in medicine.

Our Christmas festivities undoubtedly were derived from the heathen nations who used the Mistletoe. The 25th of December was originally their great saturnalia day: hence the early records of revelries and excesses, including the Lord of Misrule and other strange characters.

The Mistletoe, particularly that which grows on the Oak, was held in great veneration by the ancient Britons. At the beginning of their year the Druids went in solemn procession into the forests and raised an altar at the foot of the finest Mistletoe-bearing Oak, on which they inscribed the names of those gods which were considered as the most powerful. After this the principal Druid, clad in a white garment, ascended the tree and cropped the Mistletoe with a consecrated golden knife or pruning hook, the other Druids received it in a sheet of pure white cloth which they held beneath the tree. The Mistletoe was then dipped in water by the chief Druid and distributed among the people as a preservative against witchcraft and diseases. If any part of the plant touched the ground it was considered to be the omen of some dreadful misfortune which was about to fall upon the land. The ceremony was always performed when the moon was six days old, and two white bulls were sacrificed when it was concluded. I may here observe that a gentleman in Penzance, Cornwall, possesses a crescent of gold about the shape of and to represent the moon immediately after she had passed the first quarter. This golden crescent used to be worn by the chief Druid

when cutting the Mistletoe with the golden knife. No profane hand could presume to cut the Mistletoe; nor were all times and seasons proper for the performance of this rite. The legend of Friga and other Saxon deities connected with the Mistletoe is too long for repetition in our pages. The supposed magical properties of the Mistletoe are referred to by many writers. Lelius mentions the Mistletoe as one of the things necessary to make a man a magician or Druid. In the dark ages a similar belief prevailed, and even to very recent days the peasants of Holstein and some other countries call the Mistletoe the "Spectre's Wand," from a supposition that holding a branch of Mistletoe in the hand will not only enable a man to see ghosts, but to force them to speak to him. A writer in the year 1791 stated that the Guibdel or Mistletoe was supposed by some to have been the forbidden tree in the garden of Eden, and adding that hence, probably, arose the custom of kissing under it at Christmas; but it is more probable that the custom has been handed down to us from our Saxon ancestors, who dedicated the plant to their Venus, Friga, the goddess of Love, so as to place it entirely under her control, and prevent it from being used against her as an instrument of mischief. In feudal times the Mistletoe was gathered on Christmas eve with great solemnity, and hung up in the great hall with loud shouts and rejoicing. This has been the theme of many a poem.

"Forth to the woods did merry men go
To gather in the Mistletoe.
Then opened wide the baron's hall
To vassal, tenant, serf, and all."

From then till now Mistletoe has been considered part of our Christmas adornings.

The most certain mode of increasing the Mistletoe is by affixing the berries to the smooth young bark of Apple or other suitable trees, and a portion of them are tolerably certain to germinate if not devoured by birds. In districts where the Mistletoe is scarce the berries cannot be too thickly sown, and some of them may escape the sharp eyes of the feathered tribe. Failures arise mainly by inserting the seed into crevices of the old bark or not protecting the berries from birds. The plant may be increased by grafting, but not nearly so satisfactorily as by seed. A good plan is to gather the berries at this period and preserve them until the trees are breaking into leaf, and then smear them thickly on the young branches. Some have found it better to raise a flap of bark in the shape of an inverted A, and place one or two seeds beneath it, and thus protect them from the birds.

PEAS NEW AND OLD.

PEAS are the princes of summer vegetables. They have in the garden the best ground and the most favoured situation. On exhibition tables they every year make finer displays and absorb a greater amount of public attention than any other green vegetable. In trade catalogues they are given the post of honour, and in the advertisement columns of the gardening press they have the prominence of which they are worthy. "Peas is Peas all 't' world over," was the stock phrase of an old-fashioned Yorkshire gardener who prided himself upon being proof against "t' sorts wi' new names;" but the merits of Veitch's Perfection were more powerful than even the old Yorkshireman's prejudices. That was the first "new sort" that broke down the barriers of his exclusiveness, and he lived to grow other new sorts, and to acknowledge them as being "distinct and good."

It cannot be denied, notwithstanding the force of the old axiom "As like as two Peas," that there is a great dissimilarity in the varieties of this favourite legume. The new sorts are not only distinct in many important features from the old varieties, but they are, except those of the early round section, distinct from each other. The hybrids of Mr. Laxton and Dr. Maclean are totally dissimilar from the "old standards" in character; also, it must be admitted, in price.

Now there are many who resent the "fancy prices" which are attached to new Peas on the ground that they are not worth the money, and that to eat Peas at 5s. per quarter pint is an unjustifiable luxury. True, but the price is not assessed on the table quality of the article, but simply on its scarcity, and if a sort is really new, also distinct and good, it will certainly find purchasers let its price be what it may.

New and high-priced vegetables, and the trade enterprise of vendors by the liberal prizes offered for their new introductions, have been productive of good, not to themselves

alone and to which they are fairly entitled, but as fostering a higher type of kitchen gardening, and making that department of the gardener's duties more enjoyable and attractive. The kitchen gardens of the opulent are not, and should not be, regarded wholly from a utilitarian point of view. They should, of course, primarily be devoted to the culinary requirements of the household, but they also should add a measure of enjoyment, and be a source of interest and pleasure to their owners and attendants. By the introduction of new and proportionally expensive vegetables in small quantities a new and healthy feature is imparted to a garden. The very rarity and cost of the articles will stimulate the gardener to give them the best attention, and by them the garden will become more thoroughly worked and be brought into better condition than before. We may be tolerably certain that those gardeners who make trials in small quantities of new vegetables, and who submit their produce to the great exhibitions, do not fail in the culinary requirements of home, and that the gardens in their keeping are not only not neglected, but that they are in the highest state of culture. This improved state has in a great measure been brought about by the greater value of the crops that have been introduced. In these instances the small extent of ground that has been set aside for experimental purposes has been more than compensated for by the increased productiveness of the rest. Thus nothing has been lost in the utility of such gardens, but to them has been added an element of enjoyment—it may, perhaps, not be unpardonable to say an element of beauty. I am not quite certain that one plant which affords pleasure to the eye and mind is not as beautiful as another. I think I have seen as much beauty in well-cultivated and well-tended trial rows of new Peas as in rows of Roses. Yes, I have turned from the Roses to admire the Peas. So also have other gardeners. I know also garden owners, not only gentlemen but ladies, whose kitchen gardens have afforded them delight; but when devoted solely to purposes of utility they were seldom entered by their owners.

Can anyone suppose that the gardens in charge of such men as Mr. Gilbert, Mr. Lumsden, Mr. Cox, and other gardeners of equal fame, are less productive in useful returns for the new and rare vegetables which are cultivated in them? No: These gardens are in the highest state of culture, their usefulness is as great as ever, and besides being useful they are made infinitely more enjoyable than before, and more instructive.

New and highly-priced vegetables must not, therefore, be judged by their "pot-filling" qualities, but should be regarded as "germs of future usefulness," and in the meantime as objects affording "present pleasures." Just as the stockmasters and lovers of animals and of birds have their highly valued favourites, not as being of real service, but as affording pleasure—hobbies; so may gardens and gardeners have their pets—their "fancy crops"—which add to the pleasure and contentment of the man, and bring out his best qualities, and afford enjoyment, and in the end profit, to the master.

I am probably as practical as most men, and have been as successful in my vegetable supply, yet by the introduction of new vegetables in reasonable quantities I have made my work more pleasurable to myself, and have noticed the increased interest that my employer has taken in his garden by watching the growth of varieties which he has not seen before. The profit of the garden has not been decreased, but its pleasures have been increased. That I hold to be a great gain effected mainly by new and highly-priced seeds of, especially, Peas. They are vegetable "fancies" which have been indulged in with great satisfaction and not without profit. Yet while admitting the usefulness of highly-priced Peas in stimulating the taste in kitchen gardening, I cannot withhold my meed of approval of Mr. Turner for not hurriedly sending out his new Pea Dr. Maclean, but reserving it until his stock has become sufficient to enable him to distribute it in large quantities and at a reasonable price. I do not speak without knowledge of this variety when I say that it is one of the most important acquisitions in new Peas of recent years. Some rows of it were really "beautiful" and exceedingly useful. In cropping and in quality it is alike good. If only a limited number of new Peas can be tried this should be one of them.

I am able also to testify to the merits of some other new Peas, and recommend as eminently worthy of a place in any garden Mr. Laxton's new early variety The Shah. If it does not supersede all early Peas it will at least be worth the crown that it

costs. It should be sown at once for testing with William I., the earliest of the round-seeded section. The Shah is a fine Pea and likely to become popular, unless Mr. Laxton should supersede it, for there appears to be no likelihood that that fertile hybridist will "rest and be thankful." Still finer is its congener which is appropriately named Standard, a designation warranted by its appearance, habit, and productiveness. The above-named varieties constitute a trio which for value and distinctness probably surpass any like number of "novelties" which have been offered in any previous year. They will add to the attractiveness of any garden, and will produce a stock of seed of undoubted value.

I will now notice a few other varieties of great merit which have been introduced during recent years, sorts which I know are productive, and which have been prominent at all important horticultural exhibitions during the past season.

First I name a Pea which has not yet reached its "fullest fame"—Dr. Hogg. This should be sown with the earliest section, and it will form a succession to them, it being almost "a first early," handsome, prolific, and excellent. As a garden and exhibition Pea it possesses high qualities. It should be noted that all exhibition Peas are not high-class table Peas. Thus Superlative and Supreme are imposing in appearance by their size, shape, and colour, yet they are not "high quality" Peas as compared with the best of the wrinkled Marrows. Peas of the Prizetaker strain invariably are better in appearance than quality. The following, however, combine with an imposing appearance superior table qualities:—Fillbasket, Connoisseur, Supplanter, and Omega of Mr. Laxton; G. F. Wilson, James's Prolific, and Commander-in-Chief of Messrs. Carter & Co.; Duke and Duchess of Edinburgh of Messrs. Sutton & Sons. From those named may be selected six of the best exhibition Peas; and as the difficulty is to decide which to exclude, intending competitors must grow them all. James's Prolific is considered by some to be too light in colour for the exhibition table, but on that account it must not be lightly set aside, as it invariably "shows" well, and it is of admitted high quality. Its productiveness is also remarkable, and when had true and well grown its rows are truly kitchen-garden "ornaments," which cannot fail to be admired. It is, I believe, a selection from Wonderful, and indeed it is a wonderful improvement on that useful kind. If the stock is not selected with care it, like other Pea sports, is apt to revert to the normal type.

Most valuable as useful garden Peas and frequently affording pods worthy of exhibition, are Premier and Best of All, which appear to be closely allied, and Veitch's Perfection. Culverwell's Prolific Marrow sent out by Messrs. Veitch must have a place amongst the "most useful" sorts, its high quality, productiveness, and distinct appearance presenting great claims to attention, and which are not likely to be long overlooked. The sorts named may not—indeed they are not, superior in table qualities to some older sorts, but for quality with appearance, for use and ornament, they are those from which a selection must be made.

But there are those who do not require Peas for exhibition. They do not judge of the Peas in the pods, but when shelled and cooked. In a word, they do not want "fancy" Peas, and they will not purchase "new" Peas. Beyond question such can have produce of the very highest quality, for the Pea kingdom has many subjects, and some of the "old inhabitants" possess sterling worth. Take, for instance, Champion of England. If it does belong to the "lower orders" none of the "aristocrats" can better adorn the table. I am not in the "secrets of the seedsmen," but dare almost venture a guess that the public demand for this Pea is greater than for any other "general crop" variety. Whether that be so or not it is a prince among Peas, and if I was compelled to have only one variety that one would be the Champion of England. Huntingdonian and Culverwell's Champion appear to be selections from the Champion, and are undoubtedly good, as they must be, and they may, indeed, be superior in constitution, but for table excellencies they can be no more than equal, and that is high praise. Where ground is scarce and sticks plentiful, and where the one object is a certain supply of superior Peas, that supply cannot be more surely provided than by sowing row after row—from February till May, half of each month inclusive—of Champion of England.

But what before and what after? Well, for before sow anybody's "First Early," that is, anybody having a reputation to lose. If you deal with Carters order "First Crop;" if with Suttons, "Ringleader;" if with Veitch's, "Dillistone's Early."

There will be no difference except on the outside of the parcels. A trifle later, but equally good, is Sangster's No. 1, and better than any but dearer are William I. and Alpha. Any one of these, with a breadth of Champion sown with them in February, will produce "all prizes and no blanks."

But what after that is for latest crops? Here we have many bids for popular favour, and scarcely one that is unworthy of the great Pea family and its patrons who select some special representative. If restricted to one kind I should elect Ne Plus Ultra. I speak after much experience and many trials, and I admit having proved the value of other sorts; but I cannot be separated from my old friend. But it is too tall for many, and then what? Well, then, as the most reliable late Pea of first quality and lowly growth the true Hairs' Dwarf Mammoth has yet no superior. It is not later on first coming into use than Veitch's Perfection, neither is it better, but it is more continuous in bearing, more mildew-resisting, and more hardy, and hence I recommend this good old kind. It may, however, be superseded by Omega, for I know no other dwarf late Pea to which it is for useful qualities likely to yield the palm of supremacy. British Queen, Hay's Mammoth, Tall Green Mammoth, and their many *aliases*, all possess great merit as late Peas, as does General Wyndham, the distinct Emerald Marrow, and other proved sorts; in fact almost all late Peas are good Peas, and few, if any, are likely to disappoint when well cultivated.

I had almost forgotten to mention a "cheap, serviceable, general purpose Pea," the good qualities of which I fear are sometimes overlooked, the best of all Peas, perhaps, for a poor, dry, shallow soil—I mean the old French sort Auvergne. I was glad to see it mentioned in your correspondence columns last week, for if it is very old it is very useful; if I had to feed a school of charity boys I should rely on Auvergne.

Of dwarf Peas the best I am acquainted with are Blue Peter and Bijou; they require deep rich soil to bring out their best qualities.—A GROWER AND EXHIBITOR.

NOTES FROM MY GARDEN, 1875.

I SUPPOSE there are very few persons who can look back on the state of their gardens in the past season with universal satisfaction. We have read complaints from some of our most experienced growers of the losses they met with and the difficulties they had to encounter owing to the wretched character of our summer months, especially that terrible July, when we could indeed say, "The rain it raineth every day." But not less disastrous I think, at least in this part of England, was the drying bitter wind of May and June. Vegetation seemed completely checked; anything that was planted out seemed to diminish instead of increasing; and although great fruitfulness in some things gave us good hopes, yet in many ways we were doomed even in this to be disappointed. I never had, for example, a finer prospect of a Rose bloom, but just at the season of flowering heavy continuous rain gummed many of the flowers together, and destroyed completely the delicate blooms of such kinds as Mons. Noman and Madame Lacharme. For the same cause the Cherry crop in our county was a complete failure: abundant beyond description, but the incessant rain completely spoiled the fruit, splitting and crushing them in threes and fours. And then was there ever such a season for weeds? Not merely was it that they grew luxuriantly, but the ground was so wet that it was impossible to get on it properly, and hence they had it all to themselves. I was almost ashamed to go out into my garden, and quite ashamed to take anybody into it. I am sorry to say I can never lay claim to neatness, and last season it was simply disorder. The finest crop I had in the garden was the Sowthistle, which I consider the most objectionable of all weeds. You may give a pull at a Nettle, or Dock, or Groundsel, and up it comes, but the Sowthistle almost always breaks off, so that you cannot possibly pull it up; and unless you are armed with a trowel or some such implement you must leave it. I know all this is a confession of great weakness, but then it is better to state things as they really are; moreover, I believe many were in the same plight. "I have weeded," said one of our largest growers to me, "my standard Roses three times, and they are as bad as ever." "Weeds! don't talk to me of weeds," said the superintendent of a large garden, "I am sick of them." And as I rambled about I could see, that even where labour was not so great a consideration, that the weeds were masters of the field. Labour is no doubt at the bottom of this. Where it is scarce, as with us, and dear moreover, persons of narrow

means, if they indulge in the luxury of a garden, must, I fear, abandon the hope of having it neat if we have such seasons as the past has been.

My little greenhouse was as full as ever it had been, and went through its usual metamorphosis from the Cyclamen and Camellia season on to the end of the summer, giving me at all times a few flowers—sometimes a good many—and a great deal of pleasure. My Camellias were a great disappointment owing to the dropping of the flower buds. I had in the previous summer, contrary to my usual custom, placed them out of doors; and however this practice may answer where there is provision made for shading and where attention can be given to watering, it is in such cases as mine a mistake, and I find by last week's Journal that so experienced a gardener as Mr. Douglas has come to the conclusion that they are better indoors than out during the summer. I am confirmed in this by the appearance of my few plants at this time (January 10th). They are rapidly opening, and very few if any going brown; and they were simply removed from the greenhouse to my small cool Grape house, where they have been all the summer under the shade of the Vines. I have found too—at least I fancy so—that one or two applications of Standen's manure when they are forming their buds is a capital thing as giving power and vigour to the plants, which are confined in pot room and apparently require something of the kind. I apply it on the surface as powder, leaving the watering to convey its benefit to the soil. There are some sorts more given to dropping their buds than others, and amongst these I have found the old Double White, Fimbriata, and Henri Favre about some of the worst. Of Azaleas I have nothing particular to say. I had no new varieties, and the old sorts, with the exception of Variegata, bloomed well.

Pelargoniums consisted entirely of the new varieties of 1874 and those of 1875 which I had received through the kindness of Mr. Charles Turner. Of course the plants are small. I am obliged to keep them so, and so cannot grow many of the older varieties. Of those which were sent out from Slough last spring the following I especially noted as good:—Archduchess, lower petals richly painted crimson; top petals large spot, crimson-purple edge, white eye. Crown Prince, deep maroon top petals, bright narrow edge, white eye; very fine. Duchess of Cambridge, a very fine scarlet flower, small black spot on top petals; fine form. Duke of Connaught, dark rosy top petals, white centre; a very fine flower. Grand Monarch, dark top petals, crimson edge, crimson lower petals. Presbyter, dark maroon spot on top petals, crimson edge, clear white centre. Constance, a novel flower; fawn colour, small spot, shaded with orange, clear white eye. Alice, maroon top petals, crimson-purple edge, large white eye. I am sorry to say, that after cutting down I have not succeeded with them this year. Whether when put out of doors they had too much rain or not I do not know, but they do not promise well for this year's bloom.

After my Pelargoniums are done blooming I have little left to fill the house. I however mean to try this year, if only for the purpose of cuttings for vases, if I cannot have some Fuchsias. And while writing about decorative purposes let me say that I had in the early part of the season a number of pots of Ixias, and that I found their cut blooms most effective. They are light, graceful, very varied in colour, and last a long time in bloom, while some of the shades of colour, such as viridiflora, are not to be had in any other flower. I have found the best plan of growing them is, after potting them in autumn, to put them into a cold frame and keep them there until the spring, then bringing them into the greenhouse for blooming.

I think it will be seen from these few remarks that my little house of 20 by 10 has done its duty.—D., Deal.

NEW GOLDEN POPLAR.

We have received from Mr. Charles Van Geert of Antwerp a coloured plate representing a shoot and foliage of his new Golden Populus canadensis. It is very beautiful, and those who know Mr. Van Geert are certain that he would not circulate any representation of it which was an exaggeration of the truth. Our forest scenery is destitute of golden tints, except in the autumn, and this new gain of Mr. Van Geert's will add a beauty and variety to it which has hitherto been lacking. In his prospectus Mr. Van Geert says—

"Its leaves are quite as large as those of the common Poplar, and the yellow hue, instead of looking sickly, has a warm and vigorous tint. The better nourished the tree is, and the more

it is exposed to the sun, the more vivid is the golden hue. The stalks and the bark of the shoots become then dark red, which adds greatly to the beauty of the colouring.

"This variety, or rather this freak of nature—for it was spontaneously produced on a single branch of a large tree—has been observed by ourselves for more than five years, and during all this time it has never shown any tendency to alter its golden character.

"This novelty will be ready for sending out in March, 1876, and the finest specimens will be forwarded to the first subscribers."

THE D'ARCY SPICE APPLE.

ABOUT twenty-five years ago an Apple, said to be new, was sent out to the public under the name of Baddow Pippin by the late John Harris of Broomfield, Essex. The scions of this so-called Baddow Pippin from which John Harris obtained his Apple were procured some forty years ago by the late Mr. Jeremiah Pledger of Little Baddow, Essex, it is said from Hazeleigh Hall, Essex; but wherever they came from, they were grafted by a gardener named Robert Rolfe on to a tree in Mr. Pledger's orchard at Little Baddow, Essex. It is from this grafted tree that the late John Harris procured the scions for his Apples which he sent out as Baddow Pippin.

My object in troubling you with this letter is to state that this Baddow Pippin is in reality not a new Apple but the old-fashioned D'Arcy Spice Apple, and has been growing at Tol-

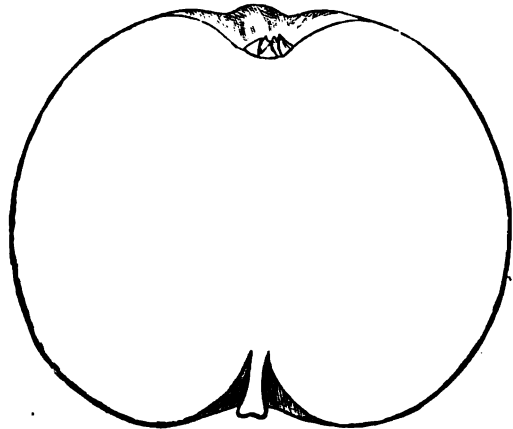


Fig. 7.—D'Arcy Spice Apple.

leshunt D'Arcy, Essex, under the name of D'Arcy Spice Apple for upwards of a hundred years, and I have to ask you to restore to it its true and ancient name. The tree from which I obtained the specimens of D'Arcy Spice Apple forwarded to you is seventy or eighty years old, and is growing in D'Arcy Hall garden; and in the memory of persons still living there were three old worn-out decayed trees of D'Arcy Spice at D'Arcy, which were probably a hundred years old at the time of their decease.

Again. In the year 1800 the then rector (Rev. Charles Carwardine) of Tolleshunt Knights, adjoining parish to D'Arcy, grafted an Apple tree in the rectory garden with a scion of D'Arcy Spice Apple obtained by him from a tree, at that time of some repute, in a cottage garden at Tolleshunt D'Arcy, and then known as D'Arcy Spice Apple.

I think D'Arcy Spice means D'Arcy espèce, and that the same is a very ancient Apple, introduced into this country by the monks who held lands there. D'Arcy Hall is a very ancient moated house approached by a bridge, dated 1575, and is mentioned in Domesday Book. The Apple must not be confounded with Aromatic Russet, *alias* Burnt Island Spice or Brown Spice.

The D'Arcy Spice Apple is a first-class dessert Apple; the tree does not bear well until of some age, and varies in growth according to the stock on which it is grafted. I think if grafted on a quick-growing stock, or double-grafted, it would become a great favourite. It is a curious fact in the history of this Apple that until last year the D'Arcy people had not the remotest idea that their favourite Apple had been renamed and sold as Baddow Pippin. I do not think that John Harris knew that

the Apple was a native of D'Arey.—HORATIO PIGGOT, *Broadwater Down, Tunbridge Wells.*

[In Dr. Hogg's "Fruit Manual" Spring Ribston is mentioned as a synonym of this Apple, and it is described as follows—"Fruit medium-sized, roundish or rather oblate, with prominent ribs on the sides, which terminate in four and sometimes five considerable ridges at the crown, very much in the character of the London Pippin. It is sometimes of an ovate shape, caused by the stalk being prominent instead of depressed, in which case the ribs on the sides and ridges round the eye are less apparent. Skin deep lively green, changing as it ripens to yellowish green on the shaded side, but covered on the side next the sun with dull red, which changes to orange where it blends with the yellow ground; the whole considerably marked with thin brown russet and russety dots. Eye rather large and open, with short segments, and set in an angular basin. Stalk very short, not more than a quarter of an inch long, and inserted in a shallow cavity. Flesh greenish white, firm, crisp, juicy, sugary, and with a particularly rich and vinous flavour, partaking somewhat of the Nonpareil and Ribston, but particularly the latter. This is a first-rate dessert Apple; in use in November, and possessing the desirable property of keeping till April or May."]

IRIS RETICULATA CULTURE.

IRIS RETICULATA is a hardy plant, but requires, to grow it well, a warm corner and a bed of pure light sandy loam; in the ordinary soil of an old flower garden the bulbs are apt to rot. This and many other small hardy bulbs will generally break up into offsets and dwindle under pot cultivation. The commonest Crocus or Tulip will do the same. Grow the Iris as I have described; take up and store in dry earth or sand when the foliage dies down, and select the best bulbs to flower in the greenhouse; in the autumn restore the bulbs to their old quarters. They will come round again after one season's growth. The Peacock Iris should be grown in the same way, but absolutely requires a glass frame over the bed.

Pot culture is, however, possible for such plants, and I recommend the following treatment: Use rather large pots—say 8 inches across; soil, very sandy pure loam; drainage, one or two large crocks with a good large handful of moss over them. Put in plenty of bulbs—say 2 inches apart, grow them in a good cold frame through the winter, and bring them into the greenhouse in the spring to flower. If you are short of Pavonias fill up the space with Tritonias as an edging round the pots.

To Mr. Robson in the matter of Cyclamens; my old friend Mr. Atkins of Painswick knows more about them than all of us put together, and would doubtless give the required information. *C. persicum* has many local forms, and runs riot in variation even in the wild state. *Coum*, *repandum*, *europeum*, and *hederifolium*, with, perhaps, *ibericum*, are true species.—R. TREVOR CLARKE.

GROS COLMAN GRAPE.

I HAVE under my charge two rods of Gros Colman growing in a Muscat house, both worked, the one on the Black Hamburgh, the other on Muscat Hamburgh. I am glad to be able to differ from "EX-EXHIBITOR," for with me it is a first-class late Grape, not only a noble-looking fruit, but of good colour and flavour, and so much approved of by my employer that I am working another on to the Muscat Hamburgh. Not only is this Grape good planted out, but I accidentally discovered that it makes a good pot Vine. I forced one with some Black Hamburghs, and it produced three bunches averaging about three-quarters of a pound each, well coloured and of good flavour, and which ripened in about a fortnight after the Black Hamburghs. I have another cane up one of the rafters in the Peach house where fire is not used after the fruit is set; that also produces noble bunches and berries which colour well, but the flavour is not good.

I certainly should not recommend anyone to plant Gros Colman in a cool house, but where it can have the advantage of a Muscat temperature I consider it one of the best late Grapes we have. I may state that my Vines are all planted inside and not allowed to go outside at all.—S. TAYLOR, *Castlecroft.*

I HAVE found this to be the best variety of late Grape grown, and a most wonderful bearer. It must be kept late to bring

out the proper flavour. I cannot boast of such large bunches as Mr. Turtton speaks of in your last issue, as ours is not a soil suited to grow heavy bunches; but still they are wonderfully large.—F. W.

ROLLESTON HALL.—No. 2.

THE SEAT OF SIR TONMAN MOSLEY, BART.

VERY incomplete would a notice of the gardens at Rolleston be if limited to their ornamental features. These were fully alluded to in our No. 768. In continuation from those pages I now proceed to notice the more useful department of the gardens.

The glass structures are numerous, some old, some new, and they are scattered over a considerable extent of space, a consequence of being erected at various periods, and in consonance with the improvements which have been made by Sir Tonman, and his predecessor, Sir Oswald Mosley. These structures number twenty-four exclusive of frames, and, excluding the conservatory, contain nearly 20,000 superficial feet of glass. They are heated by 11,000 feet of 4-inch piping attached to two boilers, one heating 8000 feet and the other 3000.

The heating has just been remodelled under Mr. Buck's supervision with very successful results. The boilers, with their outlets and inlets, and the piping connection contiguous, are in every part accessible by removing a portion of the flooring of flagstones, which form the roof of the heating chamber below. There is no setting in brickwork, but every part of the arrangement can be examined, which is an admirable provision facilitating after-repairs and, if necessary, further alterations. The smoke is conducted away to a tall shaft at some distance from the houses. This has been an extensive and costly work, but Sir Tonman is evidently a believer in the old sayings "what is worth doing at all is worth doing well," and "what is well done is twice done;" that he recognises these truths the observer finds abundant evidence.

I will now, as briefly as possible, notice the contents of some of the houses. The old range of vineries is entered by a corridor leading to the museum. The roof of this corridor is covered with *Maréchal Niel* Roses and *Bignonias* trained after the manner of Vines, and which yield a valuable supply of cut blooms; the compartment is further kept gay with pot plants in variety. The first vinery entered is a Black Hamburgh house 30 feet in length, the Vines being old and trained on the extension system. The next house is also a vinery of the same size, and is mainly occupied by the Vine that almost fills the preceding house, only in one compartment it is the Black Hamburgh while in the other it, by grafting, yields in addition fruit of *Trebbiano* and *Lady Downe's*; and further, in one division the fruit is ripe six weeks earlier than in the other, all alike good, being well coloured and flavoured and free from shanking. Without saying that the extension system produces the best Grapes it may almost be asserted that it is the easiest and simplest mode of producing them, and that none need hesitate on treating Vines thus naturally, especially if they have not been satisfactory on the more artistic (artificial) plan of restricting them to single rods.

The next is a Muscat house 50 feet in length. The Vines have been planted five years, and are in admirable condition; they are planted inside, the roots having access to outside borders. Adjoining is a house of a similar size planted with Black Hamburghs, *Alicantes*, and a Vine of *Gros Guillaume*. The Vines are young and produce excellent crops; as an instance of their vigour it may be noted that this season's cane of *Gros Guillaume* is upwards of 4 inches in circumference. The Vines are planted 4½ feet apart, and the houses are staged for plants.

We now enter a new range of glass, the first house, which is 40 feet long, being devoted to *Azaleas*. The plants are remarkably healthy, and many of them are large and very handsome, some of the best plants having been purchased from Osmaston Manor. The back wall of this house is covered with *Lapageria rosea*, and the white variety is growing on the roof. Mr. Buck finds that *Lapagerias* flourish best on a north aspect.

We now enter the early Peach house; it is 50 feet in length, and planted principally with *Royal George* and *Bellegarde* Peaches and *Violette Hâtive* Nectarines. It is a fine light house, the border being wholly inside, and the trees are started in November. In this house were also starting into growth standard Oranges on 6-foot stems, having compact heads; they are in pots and will shortly adorn the conservatory. Adjoining is a

mixed vinery filled with fruitful Vines, and the next house is the late vinery, 80 feet in length. The roots are confined to the inside border, which is only 9 feet wide; but, clearly, sufficient, for a larger and finer crop of Grapes has seldom been produced. Black Alicante is in its best style, and the berries of Gros Guillaume on the Black Hamburgh stock are as black as jet. Lady Downe's is represented by fine bunches and splendid berries. Madresfield Court has shrivelled, but no Grape is richer; it is a valuable variety, but not to be relied on for late keeping. Mrs. Pince is not quite satisfactory; the crop is heavy, bunches fine, berries large, and flavour good, but not one bunch is nearly well coloured. It is grown on its own roots and is also grafted on the Lady Downe's and Black Hamburgh stocks. On its own roots it is the best flavoured, on Lady Downe's the largest, and on Black Hamburgh the sweetest; but on all the fruit is brown—a great drawback to an otherwise good Grape. Trebbiano and White Nice are represented by heavy crops of fine clean fruit, and on the last-named stock is a vigorous cane of Duke of Buccleuch. The back wall of this grand house of Grapes is covered with Black Hamburgh Vines, which afford useful fruit for kitchen purposes. This heavy crop of Grapes has been perfected by copious waterings and rich top-dressings. Mr. Buck has never before given the border so much water and never had the crop so fine. He ceased watering when the fruit commenced ripening, and the top-dressing prevents evaporation and preserves a dry atmosphere. The Grapes were ripe at the end of September, and the crop is best at the warm end of the house. The most useful kinds for late keeping are Lady Downe's and Black Alicante.

Contiguous to the range just noticed is the orchard house. This very fine span-roofed structure was erected by Mr. Foster of Beeston; it is 74 feet long by 30 feet wide. The house contains a narrow border all round, with two central borders each 6 feet wide, the central path being between these, and there is also a path between them and the outside borders—that is, three paths and four borders. The central borders are principally occupied by standard Peach and Nectarine trees, and planted out in firm soil. The heads of these trees are large and open, and are studded with spurs to their centres, each tree perfecting eight to ten dozen of fruit. The borders are not dug, and the roots are pruned biennially. The remaining space is occupied with pot trees of Peaches, Plums, Cherries, and Apples, the trees being in a high state of fruitfulness and in exuberant health. The soil used is turfy loam and crushed bones, supplemented with surface-dressings of horse droppings and kiln dust. Vines are trained up the pillars, and are arched across the paths at wide intervals; they yield superior Grapes, and do no injury to the trees beneath. The house is now heated, and the heating has greatly improved its value, the crop being now certain, however dull may be the autumn or inclement the spring. It is a fine house admirably managed.

Entering the walled kitchen garden we find still more glass, plant houses, pineries, and Peach case. The plant houses, three in number, were erected by Mr. Ormson as "feeders" to the conservatory. Each house is 30 feet in length by 15 feet in width, lofty, and with central and side stages. The central house is heated for stove plants, the others being kept at greenhouse temperature. In the latter are healthy collections of Heaths, Camellias, Rhododendrons, Plumbago capensis on globes, very fine; Primulas, Cinerarias, &c. On the roof of one house is trained *Passiflora edulis*, heavily fruited, but the temperature is insufficient to ripen the crop. The roof of the stove is covered with Allamandas, Bougainvilleas, and Clerodendrons, which flower profusely and afford shade to the Ferns and Orchids. In this house are many Palms, comprising Kentias, Geonomas, Ocoos Weddelliana, and other choice kinds; and in brilliant garb is *Aphelandra Roeziana*. The house is further gay with Poinsettias, Eucharisses, and Euphorbias.

There is yet another low range of span-roofed pits, one being devoted to Ferns, another to Nepenthes, Orchids, and table plants, the roof being covered with Stephanotis, and others to Pines.

The pineries consist of two succession pits 40 feet long, and a larger fruiting house. These pits are sunk below the ground level—heat economisers—the roofs only being exposed. The Pines are not grown at a high temperature, and the plants are in superb condition, some of the Smooth Cayennes of fifteen months old having fruits of from 5 to 8 lbs. weight. Queens and Black Jamaicas are also grown. The visitor to Rolleston

is sure to want a second look at the Pines, for they are unusually healthy and fine. At the back of this range is a narrow propagating house 80 feet in length, heated by the mains which supply heat to the pineries, or, in other words, heated for almost nothing, for instead of encasing the pipes with sawdust they are covered with glass, a sunk path affording access to this most useful pit.

On the south wall of this garden is a Peach case 130 feet long by 8 feet wide. Along the front is a row of espaliers 3 to 4 feet high, and the back wall is covered with healthy young trees. The trees are thinly trained, and consist of all the best sorts, and yield a great supply of valuable fruit.

The kitchen garden is five to six acres in extent, and is heavily cropped, the Raspberry quarter being particularly neat, and it certainly must be productive. The canes are trained to wires 5 feet high, the rows being that distance apart. Strawberries are largely grown, the staple sorts being President and Keena's Seedling, two thousand of which are annually prepared for forcing.

In the frame ground is a pot vinery 30 feet long. The Vines are started in November, the pots being plunged in tan, and the canes trained round sticks to induce the buds to break regularly. There is also a Cucumber house of the same length, containing hundreds of Poinsettias and Eucharisses; a Camellia house 45 feet long, and 2000 superficial feet of pits for the forcing of Potatoes, Asparagus, &c. Such is a rapid glance of the gardens at Rolleston. The demands of the establishment are considerable, but it will be seen that Sir Tonman has afforded adequate means that the supply can be produced to his own satisfaction and with credit to his gardener.

The root-stores and fruit-room just erected by Mr. Buck demand notice by their size and completeness. The fruit-room is 50 feet in length by 30 feet wide, and 10 feet high. The walls are hollow, having 3-inch cavities; the roof is hipped, and lined with dry sawdust, and the floor is cemented. Thus the building, being over a cellar, is rat-proof, frost-proof, and damp-proof. It is surrounded by three rows of shelves for the fruit, with a rack at the top of them for bottled Grapes. A central tier of shelves will occupy the body of the building. These, with the roof, are well made of smoothly planed deal, the whole of the woodwork being stained and varnished. A simple and efficient system of ventilation is provided by slides in the roof. This is a model fruit-room, its size, construction, arrangement, and high finish of the workmanship being all noteworthy.

Beneath are the root-stores. The centre is occupied with a pit 8 feet wide and 3½ feet deep, with walls of 9-inch brickwork. This is surrounded by a path 2 feet 6 inches wide, and next the walls all round are a series of bins 3 feet wide built of single bricks, some of the smaller compartments being lined with cement for preserving nuts. Over the bins are tiers of shelves for the thin storing of seed Potatoes. For roots of all descriptions and in almost any quantity, for the gentle forcing of Rhubarb and Seakale, and for Mushrooms in summer, this cellar is admirably adapted, and is a valuable appendage to the garden. It is entered by a sunken door near the end, and at the other end is a slanting "shoot" for pouring in the roots. At the back of the building is the garden stable, and cart shed. In addition to this there is a spacious and well-heated Mushroom house with stone bins.

Sir Tonman has also recently erected convenient and sufficient rooms for the under gardeners, the foreman having separate apartments, and every necessary attention for their comfort is provided.

Another striking feature of Rolleston is the museum. It adjoins the block of buildings last noticed, and is entered from one of the vineries. There are not many readers even of "this end" of the Journal but who would enjoy an inspection of this rich museum, while those of the "other end" would revel amongst the thousands of birds familiar and rare, home and foreign, which are arranged and classified in beautiful order. Altogether the gardens of Rolleston are instructive. That they are well managed can hardly be otherwise when we remember the experience and antecedents of Mr. Buck, who was trained at Hawkesyard Park and Keele Hall, and has held his present charge for sixteen years. His father was gardener to T. R. Hall, Esq., of Hollybush, for thirty-four years; his grandfather was gardener to Lord Middleton, and his great grandfather was gardener to the Emperor of Russia. I have to thank him and Mrs. Buck for their attention, and especially to acknowledge the hospitality of Sir Tonman Moaley. Rolles-

ton is two miles from Tutbury station, and four miles from Burton-on-Trent.—J. W.

NOTES AND GLEANINGS.

THE ANNUAL MEETING OF THE HORTICULTURAL CLUB was held at the club house, 8, Adelphi Terrace, when the accounts were audited, and were very satisfactory. Dr. Henry Bennet of Weybridge and Mentone, Capt. Christy of Buckhurst Lodge, Sevenoaks, and Dr. Denny of Stoke Newington, were elected members of Committee in lieu of three members who retire. It was determined that during the winter months occasional meetings for discussion on subjects connected with horticulture should be held; the first being on the 19th, when the subject will be the principles and practice of pruning. Messrs. Maurice Young, John Waterer, and George Christy have been elected members. The formation of a library was determined upon, and the Committee will thankfully receive any works on horticultural subjects which may be given for that purpose.

A few friends of Mr. ALEXANDER MCKENZIE, as a tribute of their appreciation of him, have resolved, on the occasion of his relinquishing his active duties at the Alexandra Park (although still occupying the position of Consulting Landscape Gardener to the Company), to present him with a suitable TESTIMONIAL as a memento of his long and valued connection with the neighbourhood, the various public works he has executed, such as the laying-out of the Alexandra Park, the Thames Embankment, Finsbury Park, &c. Mr. John Bertram, Alexandra Palace, Muswell Hill, N., is Honorary Secretary to the Committee.

Messrs. DICK RADCLIFFE & Co. have prepared, to place over the hole in flower-pots, a square piece of zinc having a number of holes punched in it, one side having a jagged edge, and this is placed downwards in the pot. While preventing the ingress of worms it does not prevent their egress, and at the same time it forms a capital drainer of itself.

WILBERFORCE'S GARDEN.—The only remaining portion of the well-known garden at Kensington Gore in which Wilberforce and his sons were wont to disport themselves was sold last week by Her Majesty's Commissioners for the enormous sum of £108,000. The plot has a frontage of about 50 yards to the Knightsbridge Road, and a depth of about 80 facing the east side of the Albert Hall. It has been bought with a view to the erection of a few first-class houses, the price per yard being something like £25, whereas in Wilberforce's time it might have been difficult to get as many pence. One of the Mulberry trees mentioned in his "Life" as the scene of many a pleasant romp with his children may still be seen standing, but we fear it has not many months, perhaps not many days, to live.—(The Rock.)

We are informed that an article will appear in the forthcoming "St. James's Magazine" on the HISTORY OF THE ROYAL HORTICULTURAL SOCIETY by Mr. Lindsay, late Secretary to the Society. From the opportunities Mr. Lindsay had of access to the records of the Society we have no doubt but that his treatment of the subject will be at once interesting and instructive.

On the 22nd of December last a MONUMENT was erected in Père-la-Chaise, Paris, to the memory of M. BARILLET-DESCHAMPS, formerly head gardener to the City of Paris, a gentleman well known to horticulturists throughout the world. The memorial consists of a base surmounted by a large stone sarcophagus ornamented with drapery, flowers, and other appropriate emblems, the whole crowned by a bust of M. Barillet. An address was delivered by M. Henry Vilmorin, in which in choice language he reviewed the principal works of the deceased, and he was followed by M. Ermens and M. Felix Lepère, fils.

KEEPING GRAPES LATE.

I AM afraid there will be many young gardeners who, like myself, have read the very able and interesting articles on Grape-growing and Vine borders, who will conclude that it is almost an impossibility to have good late Grapes when the borders are outside and with no covering of any description to keep off rain. But that good late Grapes can be had under the conditions I have named, and a good stock of bedding plants kept in the house as well, I will endeavour to prove.

In my late vinery there are planted six Black Hamburgs and one Alicante. The Grapes were ripened the latter part of

September by the aid of a little fire heat, which was kept up during the month of October to thoroughly ripen the wood, but afterwards only in damp weather; ventilation being given at the back.

A fine bright morning is taken advantage of to water the plants. When the pots have finished draining the house is mopped quite dry, the hot water turned on in the pipes, and the ventilators let down a considerable distance, so that by night the house is quite dry.

I must add the pipes were painted with sulphur in the autumn, which has been allowed to remain on all the winter. We have been troubled very little with mildew, and have between forty and fifty bunches of Grapes at the present time—Hamburg and Alicante—most of them looking as fresh as they were in September.—W. E.

NEW BOOK.

The Dwellers in our Gardens, their Lives and Works. By SARA WOOD. London: Groombridge & Sons.

THERE are many dwellers in our gardens besides plants and flowers, but how few of us there are who take heed of them. Plants for use and for ornament are the objects which most receive the gardener's care and attention; but the birds that cheer him with their song and fill his groves and pleasure grounds with melody, the insects which aid him so much in securing him crops of luscious fruit, and the reptiles even which are frequently so much despised, how little heed do they too frequently receive! The work before us draws attention to all these dwellers in our gardens, and makes us familiar with their natures, their haunts, and their habits. As an illustration we extract the following on the ant—

"In each ant city there are three kinds of inhabitants, and on all three kinds the good of the whole community depends. There is no such thing as an ant living or working for itself, providing for its own wants or those of its young, as with most other creatures. All ants live and work together for the benefit of the whole population in each community. In each of the latter there are males, females, and working ants. The males and females have to produce the young, and so supply inhabitants for the city, while the working ants have to work for, and feed, and take care of the males and females and young, and construct the cave-cities, and it is these indefatigable little creatures with which we are best acquainted from seeing them above ground when they come up on matters of business. On them depends, in fact, the well-being and lives of all. It is they, as we have shown, who are so busy when the fine weather sets in in hollowing-out the caves or cells, which will be wanted for future progeny, and which they connect together with galleries and passages, so that all are communicable one with another. Some of the caves are for the reception of the females who are to become the mothers of a future generation, others are for the males, and others are destined for the eggs which produce the grubs or larvae, and others for the cocoons from which the perfect ants are to be hatched. The female ants being much larger than either the males or workers, larger cells are wanted for them of an oval form suited to the shape of their bodies, and where they are waited upon and tended with great care and respect, since on them depends the keeping-up of the population, which seems to be the great aim of all ant labour and industry; and when we consider how a constant diminution of their numbers must be going on from the fact that many species of birds make them their food, we can understand how necessary this strong instinct is in the nature of the little creatures, if the ant race is not to die out and become extinct. The greatest care, and exactness, and skill is shown in the formation of the little cave cells. The walls of them are built-up of grains of earth fitted into each other with great precision, and then it would seem they are covered over with some kind of cement which the creature has the power of secreting from its body, and when the whole is done the small mason will carefully pass his feelers over his work to see that all is smooth, compact, and firm, just as a human mason will measure his work with his rule to satisfy himself that his bricks are all level, and his wall upright.

"During the winter ants spend their time in a torpid state in their underground caves, and at this time the hive is filled perhaps only with workers, and the cocoons ready for hatching when warm weather comes, and it is to prepare for the fresh populations that new works and additions to their cities are made in spring, and when these are once finished the whole character and employment of the working ant undergoes a complete change. The same anxiety for the good of the whole community, the same devotion to the interests of their race and city show themselves, and the same self-denial and unwearied industry goes on; but they are now no longer miners or masons,

no longer 'navvies,' but become most tender and careful 'nurses.' From the time that the city is supplied with new abodes, and that the warmth of the sun is felt even beneath the earth, the wonderful transformation begins within the ant-cocoon which is to change its contents into a living creature. Just when the mother bird is sitting on her eggs in her snug nest, so as to give the warmth needed for their change into young birds, the ant nurses begin their loving attentions to the cocoons in their caves, which also require heat for their change into living ants. More eager bustling begins among them, which we cannot always see, since it goes on beneath ground. When the sun shines out bright and warm, the cocoons in the cells deep down below in the hive must be carried-up to nearer the surface, where the warmth will reach them, and to effect this the whole army of nurses is in commotion; and if we can manage to catch sight of them at such times we shall see each little worker with a white oblong cocoon—not very unlike a baby in swaddling clothes—held by the end in her* jaws or mandibles which she carries before her, and which forms a load almost as large as her own body, or even larger if it be the cocoon of a future male or female. But the cocoons have, perhaps, not long been placed in the warmer cells, or laid in some passage or gallery near the opening of a shaft, when the sun becomes obscured and a shower begins to fall. Now although the white covering of the cocoons is a tolerably tough and strong material, yet it would not do for them to be exposed to both cold and damp, and the careful nurses have to set to work to carry their charges all back to the lowermost cells where the rain will not reach them—to bring them up again, it may be, before the day is over, in case the sun should re-appear. No end is there, in fact, to the tender care and indefatigable attention of the nurses. It has been no doubt this running about with the white cocoons in their mandibles, or the finding of them in their nests in the winter, which has led to the mistake of supposing that ants stored-up grains of corn and other seeds, which is certainly not the case with any ants known in England, who pass the winter in a dormant state. Naturalists have, however, lately become aware that a peculiar species of ant found in some other countries does lay-up a store of food such as corn and rice, and have named them 'harvesting ants.' It may have been of such that King Solomon speaks, who was so knowing about plants and animals, where in his proverb he describes the ant as 'providing her meat in summer and getting her food in the harvest;' while in another way his knowledge was also most correct, since he speaks of the ant as 'having no guide, overseer, or ruler,' for it is certain that all the operations of the working ant, all her busy industry and anxiety for the good of the community to which she belongs, arises from an impulse within the little creature forming part of her nature, which is very like the love of duty in a human being. It does not surprise us to find other animals taking tender care of their young, and we admire the devotion and self-denial which they often show towards them, but with the ant-nurses it is the young of others whom they tend, and the good of the whole of their fellow citizens which is the aim of their labour. They seem to have the feeling which we call love of our country, or national honour and pride. They are not slaves by any means, for no one orders or exercises authority over them—they are rather willing and devoted servants to the general good. The powers, feelings, and affections of ants being so many and so curious, it has been said that the brain of the ant, perhaps no larger than a fine grain of sand, must be the most wonderful particle of matter in the world.

"But though our ants do not store-up food nor eat in the winter, they have at other times good appetites, and within our garden walls an abundant supply of food is found, suited to the taste and fitted for the nourishment of the ant colonies. They like most kinds of fruits, sweet roots, and even the flesh of slugs and snails. A dead mouse or sparrow is soon attacked and their bones picked clean by hungry ants. We know too well how a fallen Pear or Apple is often found to be hollowed-out by ants, and how our Peaches and Nectarines are attacked by them and riddled with holes. Nothing in fact that is sweet comes amiss to them, and portions of food are at all times carried down by the workers to the grubs or larvae hatched from the eggs, or to the young ants which have just left the cocoons. Their strong jaws or mandibles enable them to bite solid food and carry it in their mouths, while they have also a kind of hollow tongue like a scoop which can be used for lapping-up liquids, and is perhaps employed for taking home some of the sweet juices of fruit. We know how wonderful is sometimes the persistent industry and determination of the little creatures in getting at the kinds of food they like best. To an ant-city at one side of our garden, for instance, there is carried somehow in August the perfume of the ripening Peaches on the wall at the opposite side. We cannot detect the fragrant

odour so far off ourselves, but the sensitive nerves of the tiny ants must discover it in the air. It may, to be sure, be possible that some adventurous ant traveller has penetrated across the vast (to them) extent of land which stretches between their hive and the wall where hang the downy Peaches that are getting softer and sweeter every day, and that he has journeyed back to tell his fellow citizens what he has discovered, and has induced a large party to set off and make a causeway across the paths and beds, and form tunnels under the turf borders to where the Peaches can be reached by climbing the wall. We can easily see that a long procession of them is constantly doing this, though we know not exactly how they have first been induced to undertake such a distant exploration. But there can be no doubt that ants have wonderful ways of communicating with each other, nor that they have something like a language of their own. If we watch a party going to and fro across a path, we soon observe that they occasionally stop as they pass each other, touch one another with their feelers or antennae, and then continue their route, much as we do ourselves when we meet a friend and have a chat with him in the street. Naturalists who have observed the ways of ants very carefully and constantly have seen that when any calamity has occurred in the colony, the workers will run about and tell the news to those at a distance with a touch of their feelers, and that then all who are so warned will hurry to the scene of the disaster in order to set about repairing it. Perhaps even sounds are emitted by ants, and many other insects, which are too fine and high-pitched for our ears to hear, as the elephant who hears the deep notes of an organ or drum cannot hear the high and shrill notes of a pipe or flute. There have been cases where ants seem to have got scent of some store of honey, or treacle, or sweet preserve within a house, and have journeyed a long distance in great numbers to reach it, even making their way down chimneys to get to the luscious store, but our garden ants are generally contented with what they can find without doors."

This charming book is beautifully and liberally illustrated with coloured plates and numerous woodcuts remarkably well executed, and we can recommend it as a very useful, instructive, and entertaining companion to everybody who has a garden; but O! Mrs. Wood, where is the index?

HOOPER & CO.'S TRELLISES.

We have seen some of these new plant trellises, and Messrs. Hooper are quite justified in saying that they are unique in appearance, elegant in finish, and light. They have the advantage over other trellises that they are without sharp angles,



Fig. 8.

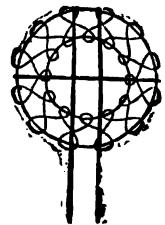


Fig. 9.

so that the training of plants gracefully is facilitated. Fig. 8 is for any plant requiring training. Fig. 9 is specially adapted for Ivy and other plants of similar habit.

OUR BORDER FLOWERS—NIGHTSHADES.

I THINK it would be difficult to find a more beautiful family of plants than the Nightshades, especially that section now under notice. For decorative purposes, for pot culture, also for beds, borders, or rockwork, the *Nierembergias* are admirably adapted. They are said by some to be hardy, but in the localities where I have cultivated them I have had to treat *Nierembergia gracilis* as half-hardy, yet it is easily preserved through the winter in any cool and moderately dry structure from which frost is excluded. Cuttings root freely in well-drained pots and very sandy soil. If inserted in the summer and autumn and placed in a cold pit they may be potted-off in spring, and grown-on in pots, or they may be planted where required. This is a charming plant for edgings, vases, or baskets; it is appreciated wherever it is met with on account of its graceful habit and lovely flowers.

N. calycina is a neat and attractive plant, but is not nearly so well known nor so freely cultivated as it ought to

* We may say her, since it has been discovered that the working ants are really females, though imperfectly formed ones, so that they do not produce eggs.

be. *N. frutescens*, too, is an acquisition that ought not to be passed by; it is of much taller growth than the preceding, of good habit, and may be turned to good account where border flowers are cared for. It ought to be in all collections. *N. Veitchii* is a very desirable plant, of dwarf habit, and is well adapted for a place in very choice selections of rock plants. But I claim the palm for *N. rivularis*, which is quite hardy. In my estimation this is one of the choicest hardy herbaceous plants that we possess. When well established in a nice moist situation on a rockery or border, its beautiful flowers cannot fail to be admired. This species is of recent introduction, and is worthy of being included in all collections of border flowers. It may be increased by division, cuttings, and seed.

Sandy loam and peat with well-decomposed vegetable matter well mixed together will grow all the *Nierembergias* well.—
VERITAS.

EUPHORBIA OFFICINARUM.

We have been appealed to to give the specific name of a "prickly fleshy Cactus." The plant is not a Cactus at all, but



Fig. 10.—*Euphorbia officinarum*.

the mistake of our correspondent is pardonable, for the resemblance of this *Euphorbia* to a Cactus is sufficient to mislead the ordinary observer. We have only to glance at the

species now figured and the well-known and popular stove plant *Euphorbia jacquiniiflora* (fulgens) to appreciate the extreme dissimilarity of the different members of this great family—so great as to number upwards of 2500 species. The example figured is a stove plant, and was introduced from Africa nearly three centuries ago, but it will grow well in vineries if the plant is kept dry during the winter and has the soil and treatment usually afforded to Cactuses. It is only in old gardens that plants are found, and where they have been permitted to exist as "belonging to the place;" but now curious succulent plants are more cared for than they have been during recent years, and are again thought worthy of cultural attention.

The *Euphorbias* possess great medicinal properties, and, according to Endlicher, *Euphorbia officinarum* is the plant that King Juba discovered in Barbary, and named after his physician, who was brother to Mnsa. It is a native of Africa, Arabia, and India, and is one of those Cactus-looking species, without leaves, with erect, thick, fleshy stem and branches, having the appearance of candelabra; each branch is terminated by a red flower, and is covered with knobs, from which issue sharp spines. This is the species supposed to yield euphorbium, although *E. canariensis* and *E. antiquorum* have also been given as its sources. This is obtained by making incisions in the plant, from which flows an abundance of acrid milky juice that concretes on exposure to the air. Bruce states that he met with it in Abyssinia, where it is called Kolquall, and says that when the branches become old and withered, instead of milk they contain a powder so acrid and piquant that it causes sneezing by merely shaking them; this powder is euphorbium.

OLD TREES.

MISTAKES, when faithfully chronicled, afford great instruction. It is not too much to say that by remembering my own errors and observing the errors of others that I have derived more substantial information than has been afforded by successes. Failures, with the loss and inconvenience resulting therefrom, are more firmly impressed on the memory than are successes, for an accident or a narrow escape from serious injury is remembered for a lifetime. There are few, especially gardeners, who in a long period of practice have not committed many and serious mistakes, and which now stand out as danger signals.

A man who can boast that he never made a mistake is not likely to have made many experiments, or to have risen above the degree of mediocrity. Yet how seldom we see mistakes acknowledged, as if the admission of them was derogatory to a man's dignity, forgetting that by ignoring them the most valuable of life's lessons are lost, and that by admitting them a manly act is done and a great service rendered to those who are ever liable to similar errors.

Our genial mentor, "WILTSHIRE RECTOR," has in his "greetings" grappled with the subject of fruits, and has assailed my conservatism of "old trees." The rector speaks of the trees as moss-covered, scrubby, cankered, ugly, &c., and desires their removal and replacement by pyramids in poor men's gardens. Our friend's remarks are theoretically sound, and are prompted by the best motives; but I can bring some hard practice to bear on the matter which "WILTSHIRE RECTOR" has not experienced. In order to do this I am tempted to fall into the autobiographical groove.

I was born under a poor man's roof, and can well remember when a family of nine had to subsist on the "breadwinner's" earnings of 10s. a-week. Before the cottage grew two old Apple trees gaunt, scraggy, and ugly, but—they paid the rent. In due time I became a gardener, and at the mature age of twenty-two was promoted from foreman in "my lord's" garden to chief in the "squire's." Of course I knew a great deal (more than I do now), and my father was persuaded to let me "improve" his garden by uprooting one of the old monarchs, grafting the other, and planting as compensation a dozen pyramids in (of course, as I was young then) as many different sorts. I further stipulated to pay the rent until the young trees came "into profit." Sequel.—I had to pay that rent for ten years, or just £40. Had the young trees been all of one sort, as Lord Suffield, Beauty of Kent, Dumelow's Seedling, Cox's Orange Pippin, or any other free-bearing kind, I should, no doubt, have saved fully £20; but the sorts coming in one after the other—a dozen of this and a peck of that, brought no useful and substantial return to compensate for

the fifty to sixty pecks which were commonly yielded by the old trees. Further, when the fruit again paid the rent the greater portion was produced by the old tree that had been cut down and grafted. The scions did not grow, but the old stump put forth vigorous shoots, which are now fruitful branches, and I cannot predict how long it will continue to yield valuable fruit.

Many a gnarled old orchard tree may invite uprooting; it is moss-covered, and apparently exhausted, but the real fact is its energies are crippled and its channels of life obstructed; remove the obstruction, and note its liberated power. It puts forth new leaves, new branches, new roots, and new fruit. If the trunk of a tree is healthy and the kind is good, yet the produce still trashy, cut it down and do not graft, and in the poor man's garden the old tree will be more profitable than the young pyramid. If the kind is not good, of course graft. Either plan is preferable to uprooting—that is, if the old stem is healthy.

The dozen pyramids which I planted twenty years ago are now fruitful trees, but have long ceased to be pyramids. They have gone the way such trees usually go under such circumstances, the only pruning they receive being the gradual removal of the lower branches until the trees become useful standards, needing (which in such places they cannot receive) no summer-pinching, but forming natural spurs on natural trees. Pyramids, where they can have skilled attention, are both profitable and attractive, but I cannot resist recommending old-fashioned standards as the trees to fill the markets with useful fruit, and pay the poor man's rent: hence it is that I plead for "old trees," and enter my protest against their hasty and wholesale destruction. Renovate, I urge emphatically, but do not destroy.

I once committed an error on a larger scale. The orchard in my new echange was an old one; the trees were mossy, scraggy, and ugly. As is common, between the young man and old trees there was no bond of sympathy. Their removal was urged, and a new plantation coveted. But the old master, wiser than the young man, insisted on the work being done "by halves." Half were accordingly destroyed, and new trees purchased at a cheap rate at an auction sale. They were planted, and are fine trees now, but they were not "true to name," and but for the old trees which were not destroyed the fruit supply for the establishment would still be far below the requirements.

Those are lessons which should not be lost. They speak with all the force of dearly bought practice. Never trust to cheap trees; never destroy the old until you have proved the new.

I have yet another example of the dangerous nature of "improvements" which involve extensive fruit-tree destruction. In the parish adjoining my abode is the seat of a nobleman of very high rank. He had other seats, and seldom was in residence here, yet here were the family fruit preserves. The trees were numerous, and, it must be admitted, ugly. They no doubt also impoverished much ground, but they also yielded tons of serviceable fruit. A young gardener was installed in charge. He was a persevering, industrious, and able man, but, like many others, judged too hastily, and "improved" too quickly. The old trees were to him an eyesore; their appearance could reflect no credit on his management; they lacked form, symmetry, and vigour. He longed for trees of modern mould which would reflect in their forms their manager's skill. These he obtained, but, unfortunately, before proving them he destroyed the old. Some he pruned, others he grafted, and many he uprooted. The following year the call for fruit could not be answered except by assurances of the precocious character of the new trees; but another year brought another failure, and then a third. The irate nobleman could endure it no longer, and the career of a promising young man was cut short by dismissal. The destruction of the old trees was unpardonable, and the misdirected energies of an able man were lost, his hopes of fame blighted, and he has since struggled on in obscurity.

I have said, Rather than destroy renovate. A great deal may be done in the way of old fruit-tree restoration that is left undone. The lichens are tolerated year after year to luxuriate on the branches, appropriating the juices of the tree, robbing it of sustenance, almost of life. The moss-covered bark of neglected trees has an analogy in the skin affections of animals, and neither can flourish so long as the evil is suffered to remain. The cleaning of the bark of old trees is directly beneficial, and if nothing further is done than that

their improved state becomes shortly manifest. Lichens are easily destroyed—first, if very bad, roughly scraping the branches and then dressing them thoroughly with fresh lime, dusting the trees when the branches are wet. Lime also mixed with water, in which at the least a pound of salt has been dissolved to each pailful, will destroy the parasites if applied in a thorough manner, and will not only not injure the trees, but cannot fail to be of the greatest benefit. The glaring white colour, if objectionable, may be toned down by soot, or a colourless bark-cleanser is afforded by a strong mixture of brine and soft soap. The removal of the exhaustive encrustation of moss, especially from the young branches, permits an increase of food to the tree both from the earth and air, imparting to it additional sustenance and strength, which it will show by healthier foliage and better fruit.

But that is not all that old trees require and deserve. They require pruning; some gently, some violently. On the heading-down of old fruit trees we may take a lesson from the plantations of forest trees. Who has not observed the vigorous upspringing of fresh growth from the old stools of recently felled broad-foliated deciduous trees and evergreens, the narrow-leaved kinds, as the Firs, being exceptions?

Fruit trees are amenable to the same mode of resuscitation. Healthy trunks of Apple and Pear trees in orchards, and Pears, Plums, and especially Peaches on walls will, if cut down to a convenient part, break fresh growth and cover space, and bear a given quantity of fruit much more quickly than will young trees. It is not always advisable to dismember the trees so thoroughly, but it is as well that we forget not that it may be done if necessary, as it certainly might be more frequently than it is, with undoubted advantage to trees and owners. It is well known that an old Apple or Pear tree of, it may be, a century old will, if grafted, put on a new head, grow vigorously, and bear after the manner of a young tree; yet do we not forget that if the old stem was not grafted that it would push fresh growth of its own kind, which would grow as freely as do the scions, of which it becomes the foster-parent?

Now for some more gentle pruning. Much has been said on the necessity of thinning the branches of old fruit trees. "Open out the centres of such trees and let the light and air do their beneficent work," is oft-repeated advice, and has a tempting sound. Here again the theory is good, but practice is needful to apply it to a profitable purpose. We must not go to work hastily and without due thought. First consider if it is possible that by exposing the interior branches of an old fruit tree, which have been enveloped in semi-darkness for half a century, to the sun and air we can clothe these old branches with fruitful spurs. In ninety-nine cases out of a hundred this hoped-for result is not achieved, and if the tree so operated upon is isolated, and on all sides exposed, the probability is that more harm than good is done by a violent thinning of its branches. I well know that I have done great injury to more than one old tree by an attempt to bring it to an ideal condition. I have cut away parts that were fruitful to admit light to the fruitless branches; but, as may be expected, after twenty years of waiting I find these branches (except at their extremities) fruitless still. I have thus not made the barren parts fruitful while I have reduced the fruit-producing parts of the tree. I was only a radical then and proceeded in a radical manner. I am older now, and have found that we cannot make the interior of a tree fruitful except by a full exposure of all its parts to the light and air from the first years of its existence.

An isolated old tree bearing heavy crops of useful fruit should be gently pruned by cutting away only unfruitful parts, leaving its outer surface as Nature has formed it, and the tree itself will present more leaves to the light and to a more profitable purpose, than we can effect by the "assistance" of thinning. That is what failures as well as successes have taught me in regard to old trees standing alone and exposed.

With trees that are sheltered, as in large orchards, danger by overthinning is not so great. Indeed, if a liberal thinning of the branches in such cases is followed by another important operation much good may be accomplished. If we can admit the light more freely we foster a shorter-jointed and more fruitful growth on crowded trees. But pruning alone will not do this; to be effectual it must be followed by the supplemental work of rubbing. Perhaps that is not an orthodox term and may not be found in the "Gardener's Dictionary" of the young professional; never mind, it is still expressive of the useful practice of an old practitioner. Suppose a man in the winter months takes one-third of the wood from an old

tree, what is the direct consequence of the thinning? It is this—From each "out" three, but more likely half-a-dozen, buds will push young shoots, and, if left alone, will form fresh branches, and in two or three years the tree is more over-crowded than ever. Thousands of trees, paradoxical as it may sound, have been made thicker by thinning; in fact, that is a result that must inevitably follow if the winter thinning is not followed by spring and summer "rubbing." Most essential is it this should follow the pruning of old trees, but seldom is it done. It simply consists of rubbing off the young growths that clothe the branches when such growths are about an inch long; it can be done by the finger and thumb, and a man will do more in half an hour to preserve the openness of the tree than we could accomplish in half a day with the saw and pruning knife. Winter pruning, if not followed by this simple summer dressing, is work only half done, or worse. When I see a tree unusually dense—its interior choked with a network of branches, useless and fruitless—I have always a suspicion that it is the result of "thinning;" rub off the after-growth and such a result never follows.

Something may be said on assisting the roots of "old trees;" also on the renovation of wall trees, for in these, too, I have made mistakes and seen mistakes made by others, which I will quote on a future occasion.

Mr. Luckhurst, the young-tree champion, is also an old tree-preserver. I happen to have seen Mr. Luckhurst's young trees, and I am not conscious of ever having looked at such trees at five years old. He, at any rate, does not defend the old because the young trees have failed him, and his testimony is, consequently, the more valuable.

One part of Mr. Luckhurst's letter is especially suggestive—that in reference to moss on the bark. He asserts that lichens do no harm on the "old bark," but urges their destruction on the "smaller branches." Do not we dress trees at the wrong end? How often do we find their stems limewashed, while the "smaller branches" are moss-covered? That is palpably wrong. I believe I have never expended my labour more profitably to my employer, and with greater benefit to his trees, than when, mounted on a tall ladder on a still, foggy morning, I have poured the lime dust among the fruit-bearing twigs, making them and myself as white as a miller. It is the tops of old trees that require dressing—those fruit-bearing parts which are so systematically left to the lichens, and the lower portions of the trees may take care of themselves.—**RADICAL CONSERVATIVE.**

PORTRAITS OF PLANTS, FLOWERS, AND FRUIT.

CUCUMIS SATIVUS var. *SIKKIMENSIS*. *Nat. ord.* Cucurbitaceae. *Linn.*, Monocladia Monadelphica.—The fruit is yellow, densely spotted with brownish red. Dr. Hooker says, "This singular form of the common Cucumber, though very commonly cultivated in the Eastern Himalayan Mountains, appears never to have been noticed horticulturally or botanically till I found it in Sikkim in 1848, and whence I brought drawings and specimens to England. These were described by N. Naudin in 1859, in his essay on the species and varieties of Cucumis in the 'Annales des Sciences Naturelles,' under the name of *Coneombre de Sikkim*; and he says of it that it is the most remarkable variety of the common Cucumber known to him, whether for the length or for the bulk of its fruit, which I have found to attain 1½ foot in length and a girth of 15 inches. It is grown in all parts of the Sikkim and in the Nepal Himalaya, up to 5000 feet elevation, in prodigious quantities. It ripens in July and August, or earlier at lower elevations, when the fruits are sold in the markets and eaten raw by the natives of all ages, as well as cooked. So abundant were they in the year 1848 that for days together I saw gnawed fruits lying by the natives' paths by thousands, and every man, woman, and child seemed engaged throughout the day in devouring them.

"The Sikkim Cucumber was first fruited in England by Major Trevor Clarke, who believed that he had fertilised it with the pollen of the Telegraph Cucumber. By some blunder, perhaps owing to the Melon-like appearance of Major Trevor Clarke's fruit, which was sent to Kew, and from which plants were raised, it is described in the *Gardener's Chronicle* as a hybrid between the Melon and the Cucumber—a cross which has never been effected. On its fruiting at Kew shortly afterwards I recognised it as my Sikkim plant, and the statement as to its hybrid origin was corrected in a succeeding number of the *Chronicle* (1875, vol. iv., p. 308). It flowered in the Tropical Economic House in July, and the fruit ripened in

August, when it attracted great attention from its size, singular form, and colour.

"In connection with this subject I may mention here that the origin of the common Cucumber, which is supposed to be unknown, is in all probability the *C. Hardwickii*, *Royle*, of the Himalaya Mountains, which inhabits the sub-tropical region of the range from Kumaon to Sikkim. This opinion, founded on specimens gathered by myself in the latter country, is also adopted by M. Naudin, upon the same materials (*Ann. So. Nat.*, l.c., p. 30). The flowers and leaves of the two plants are almost identical, but the fruit of *C. Hardwickii* is small, smooth, and very bitter; it is, however, striped with white and green, a very usual character with the Sikkim cultivated Cucumbers."—(*Bot. Mag.*, t. 6206.)

NICOTIANA TABACUM var. *FRUTICOSA*. *Nat. ord.*, Solanaceae. *Linn.*, Pentandria Monogynia. Flowers pink.—"A very little known plant, though introduced into England in the middle of last century, and admirably figured by Philip Miller, F.R.S., gardener to the Apothecaries Company's Botanic Garden at Chelsea, in his fine folio work illustrative of 'the most beautiful, useful, and uncommon plants published in his Gardener's Dictionary.' Miller describes it as growing naturally in Guinea, whence he received the seeds, and as being cultivated in the Brazils and sent to Europe under the name of 'Sweet-scented Tobacco.' Dunal, in De Candolle's 'Prodromus,' gives the Cape of Good Hope as its native country on the authority of Linnaeus, where, however, no species of the genus has been found in a wild state."—(*Ibid.*, t. 6207.)

MADEVALLEA SPHIPPIUM. *Nat. ord.*, Orchidaceae. *Linn.*, Gynandria Monandria.—"Dr. Reichenbach observes of it that it is a highly curious one; and it is indeed very different from any hitherto figured in this work, especially in the lateral sepals, that form a deeply concave bowl-shaped body, of a remarkable rufous-brown colour, and are thoroughly united even to the base of their long yellow tail-like tips, which curve away from one another in a singular manner. The inside of the united sepals is, moreover, traversed by five corrugated ribs or keels, that meet at the apex of the body, leaving deep concavities between them.

"I am indebted to Mr. J. T. Barber, of the Old Hall, Spondon, Derby, for this fine species, which he sent to Kew in March last, with the information that it was grown in a house with a day temperature of 65° Fahr., and a night one of 52° to 60°, and was watered but sparingly, a flower having been spoiled previously by over-watering. Dr. Reichenbach states that it was first discovered at Loxa by the late Dr. Krause, who sent it to Messrs. Backhouse, and that it has subsequently been obtained from Antioquia and Medellin by Mr. Wallis and others."—(*Ibid.*, t. 6208.)

BLANDFORDIA FLAMMEA var. *PRINCEPS*. *Nat. ord.*, Liliaceae. *Linn.*, Hexandria Monogynia.—A variety of *B. flammea*, but "for horticultural purposes it is a much finer plant. The bright crimson of the tube and pedicel form a very effective contrast with the bright yellow of the segments; so that, size of flower and colouring both taken into account, it may safely be said to be for decorative purposes the finest of the known Blandfordias. It was introduced by Mr. William Bull from New South Wales about 1878, and was exhibited by him at South Kensington in the summer of 1875."—(*Ibid.*, t. 6209.)

ANDROSACE SARMENTOSA. *Nat. ord.*, Primulaceae. *Linn.*, Pentandria Monogynia. Flowers pink.—"An interesting addition to the collection of rockwork plants, hardy and a very free grower. It is a native of the loftier regions of the Western Himalaya, and was first found in Central Nepal, whence it was sent to Dr. Wallich, then in Calcutta, about the year 1820, by the resident at the Nepalese Court, the Hon. E. Gardner. Since that period it has been found further west by Mr. Edgeworth, in Kumaon, at an elevation of 11-12,000 feet, and on the Zoji La Pass, north of Kashmir, by Dr. Thomson, at about the same height above the sea. Our plant was raised from seed collected by Dr. Bellew (who accompanied Forsyth's mission to Yarkand), at the same locality as Dr. Thomson's came from, and it was flowered first and beautifully by Mr. Isaac Anderson-Henry, at Hay Lodge, Trinity, Edinburgh, and subsequently at Kew, but in far less perfection than in the northern clime. As a spring bloomer, flowering in April, it will prove a most welcome accession to the hardy herbaceous border, and it is propagated with great ease by its runners, which spread all round the plant and hang over the sides of the pot in profusion."—(*Ibid.*, t. 6210.)

APPLE—*Paul's Imperial Crab*.—"Specimens of this very ornamental fruit were exhibited at South Kensington in

September, 1874, by Messrs. Paul & Son of Cheshunt. Fruit roundish oblate, about 1½ inch in diameter, with numerous shallow ridges, most evident towards the eye; stalk half an inch to three-quarters long, set in a moderately deep acute hollow; eye prominent, with long acute calyx-lobes, set in a broad shallow cup. Skin yellow, almost wholly covered with bright red, the outer part more deeply coloured, very deep crimson, with a thin bloom. Flesh yellowish, firm, tender, and moderately juicy, with a fresh and rather rough acidity.

"Messrs. Paul & Son have obligingly communicated the following particulars respecting this very ornamental fruit-bearing plant:—

"The Imperial Crab was a seedling raised by Mr. R. Laing of the Twickenham Nursery, a cross between the Red Astrachan Apple and Siberian Crab. As I understand Mr. Laing, it was accidental, the two trees standing with interlaced branches in one of the old walled squares of the nursery. It fruited, and was exhibited at the Pomological Society's meeting about the year 1865, where it was much admired, but did not receive any official recognition. Struck by the fruit on the young grafted trees, which I saw and admired three or four years successively, I persuaded Mr. Laing to let my firm send it out in conjunction with him. Hence when distributed in 1869 it became generally known as Paul's Imperial Crab. Its handsome foliage and vigorous habit, coupled with the brilliantly tinted fruit, have gained for it general favour. The fruit almost declares its parentage, so vividly is it coloured, while the Astrachan-Apple blood gives it the quality of being the earliest-ripening of the Crabs. It makes a handsome standard or free pyramidal bush. Miss Laing adds:—"The fruits preserved in various ways like the Siberian Crab make an agreeable and ornamental dessert dish; they may be also preserved like Morello Cherries, in gin, with a flavour of brandy, or boiled in syrup."—(*Florist and Pomologist*, 3 s., ix., 13.)

MELBOURNE HALL,

THE RESIDENCE OF W. D. FANE, ESQ.

MELBOURNE is a small market town of Derbyshire, containing about three thousand inhabitants; it is situated in the valley of the Trent, on the borders of Leicestershire. It is eight miles from Derby, and is easily reached by railway, since there is a branch line opened which runs through to Ashby-de-la-Zouch. The whole district is full of interest to the traveller. At Ashby-de-la-Zouch, only seven miles distant, are the splendid ruins of the old castle of the Zouches; while within an hour's walk of Melbourne Hall is Calke Abbey, the elegant residence of Sir John Harper Crewe; also Coleorton Hall, so recently figured in these pages; and Staunton Harold, the costly seat of Earl Ferrers.

Melbourne is noted for its fertile market gardens. Strawberries are grown in great abundance, and we are told that forty tons are sent to Derby and other towns during the season. It is from this place that Viscount Melbourne derived his title, as well as the thriving city of Melbourne in Her Majesty's far-off dominions of Australia. It is remarkable that during the last twenty-six years Melbourne Hall has been the residence of two Prime Ministers whose titles have become extinct—Lord Melbourne and Palmerston.

The Hall, which is in the Italian style of architecture, was rebuilt by Sir Thomas Coke about the close of the seventeenth century, who served in Parliament and held important offices under Queen Anne. Sir Thomas so distinguished himself and became so great a favourite with his Sovereign that she presented him with a pair of vases that are placed in the gardens. The carriage entrance is a small enclosure entered through a pair of iron gates. At each side of the gates are two grand old Cedars. Passing through a narrow gate the visitor finds himself on a broad terrace walk, 24 feet wide, immediately in front of the mansion. Turning to the left is the lawn, laid out in separate terraces or parterres. Ornamental beds are cut out in the turf, and groups of shrubs and single coniferous plants, with vases and figures of fine sculpture, are judiciously arranged in different parts of the grounds. By the side of the central walk I observed some grand Red Cedars 25 feet high, equally fine Irish Yews, and several clumps of large Yuccas. At each corner of the upper terrace are two fine Decidars from 30 to 40 feet high, the largest being 90 feet in the circumference of its branches.

It is a remarkable fact that several other Cedars planted at the same time on the lower terrace, and only some 10 or 12 feet

from the same level, were killed during the severe frost of 1860, while those on the upper terrace survived.

On the lower terrace the first objects of interest are four Catalpas, fine deciduous trees for large lawns; the largest is 60 feet in the diameter of its branches. A little distance from this spot is a circle of grass, with a fine image of Mercury in the centre mounted on a massive pedestal. A little lower down is the pond or lake, but generally called the canal. At the opposite side of this sheet of water from the house I noticed an alcove formed of wrought iron of most elaborate design, and bearing the arms of the Coke family; it was like a huge birdcage, and had stood the storms of nearly two hundred winters. These lawns and terraces are encircled with a Yew hedge 12 feet high, and I mounted a ladder to ascertain the width at top, when I found the hedge to be 10 feet across. The lower part of the pleasure gardens are encircled again with a background of Scotch Firs planted in the time of William III., but many of them are fast falling into decay. Leaving the lower terrace we come to a spot where five walks branch in different directions: three of them terminate with fine sculpture, or bubbling fountains. Old alcoves are observed in recesses cut in the Yews, but restored from time to time.

Wandering on we find ourselves on a gentle eminence with a long and charming avenue at our very feet. Half-way down this long vista is a fountain perpetually playing. Turning a little to the right is a junction of three glades flanked by gigantic Limes cut every five years to the stumps. Beyond the first glade across the park is another vista, through rows of Spanish Chestnuts. From the second glade is another view out through the park to catch a glimpse of the distant hills. On this eminence is placed one of the vases before named which was presented by Queen Anne. It represents the four seasons, and is one of the finest examples in modelling in existence. On the pedestal is the monogram "T. C.," of the Thomas Coke to whom this handsome present was given.

Turning to the left we reach the western terrace, and here the scene is entirely changed in character. In one part of the walk is the Elm avenue, though many of the trees are decaying with age. Down in a deep dell I noticed some fine specimens of *Pinus cembra*, very bushy, but not so proportionately high, for the leaders were frequently destroyed by late spring frosts. To the left is the large lake, 22 acres in extent, with a grand irregular margin, an island in the centre, and on its surface boats and waterfowl. In a secluded corner we come on a mineral spring, over which is erected a charming rustic grotto by the Hon. Mrs. G. Lamb, formed of tufa, stalactites, and spars, and bearing on a marble tablet over the water the following lines by the Hon. George Lamb:—

"Rest, weary stranger, in this shady cave,
And taste, if languid, of the mineral wave.
There's virtue in the draught; for Health, that flies
From crowded cities and their smoky skies,
Here lends her power from every glade and hill,
Strength to the breeze and medicine to the rill."

Passing through groves of deciduous trees and evergreens of every shade we cross a narrow brook that intersects the pleasure grounds in a subterranean culvert, and empties into the large lake at the lower end of the lawn in front of the mansion. Here we found a snug Rose garden; all the beds contained three rows of plants—standards in the centre and dwarfs on either side.

Another remarkable feature of these gardens is the Yew tunnel commonly called the Lover's Walk. It is formed of an avenue of Yews 150 yards long and 10 feet wide. It is a literal tunnel, for the branches are so grown and intergrown one into the other that it is only here and there that the ancient branches can be pierced with the rays of light. On the opposite side of the grounds is the library garden. At the top of the avenue of Wellingtonias and Cedars is the muniment room, where it is said that Baxter wrote his "Saints' Rest." On a low wall near to the conservatory is perhaps the largest Wistaria in England, its branches extending 800 feet. Formerly it extended 860 feet, but the large Cedars overshadowing its branches have caused them to die-off.

The kitchen gardens are about three acres in extent, and on the walls I noticed some good examples of Pears, Plums, Apricots, and Cherries. Round some of the quarters were bush Apples and Pears that produced good crops of fruit. Strawberries here are extensively grown, and from the appearance of the beds fine crops may be expected the coming season. The usual quarters devoted to vegetables I found as well

filled as they usually are in an ably-managed gentleman's garden. In the Peach house I noticed that the trees were planted about 4 feet apart, and trained as cordons up the rafters, and I was informed that by the system good crops of fruit are secured.

The church is in close proximity to the Hall, and presents more the appearance of a cathedral than a parish church. It is of the Norman period, and a fine example of that style of architecture. It is full of historic interest, and its many monuments and tablets are worthy of examination. In one of the vestries I saw an old will which has to be read once a-year from the pulpit, and for which the minister receives 5s.

I have dwelt longer on this grand old place than I contemplated. It would betray a want of gratitude on my part to conclude these notes without acknowledging the courtesy I received from Mr. Pearce, the highly respected head gardener.

and so on to the top, where the manure ought to be more decayed on account of the plants soon reaching it. If the surface soil is of a clayey nature, lay it up as rough as possible, and it will become pulverised, and its condition will be improved by the addition of mortar rubbish at the time of working it down for planting. Such beds in well-drained land would last for several years with the usual assistance in spring and summer cultivation; but if the beds are not to be permanent, a depth of 2 feet, with the bottom being broken up and manure added in the usual way, will be sufficient.

It is always best to select a piece of ground as open as possible and that is not permeated by the roots of trees. It is scarcely possible to work Asparagus soil about too much before the beds are planted, and that is why I advise the ground being prepared early; and as the proper time for planting is the latter end of March or April, according to the forward state of the weather, this will give fully two months for the soil to be thoroughly pulverised.

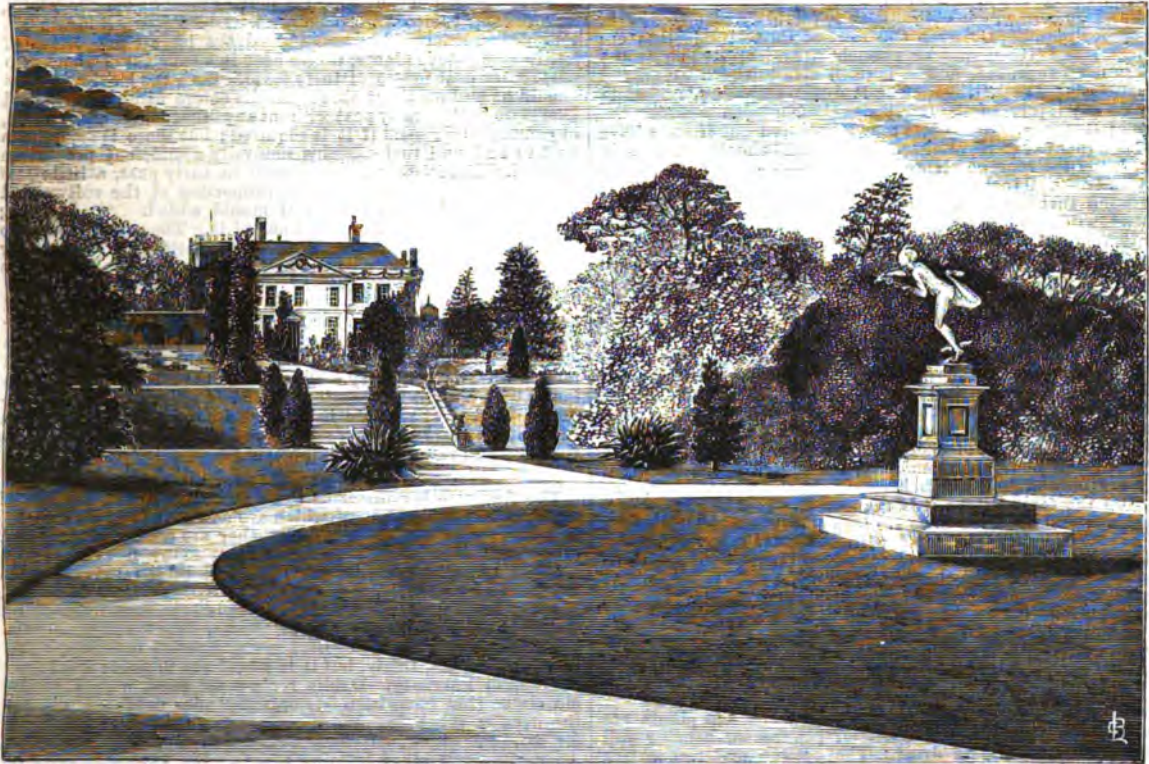


Fig. 11.—MELBOURNE HALL.

It is no mere compliment to Mr. Pearce to add that everything was in excellent keeping.—R.

NOTES ON VILLA AND SUBURBAN GARDENING.

PREPARING ground for Asparagus beds may very seasonably form one of the operations to be done now. It will be best, where two or more beds are to be made, that the whole of the ground be prepared at one time, because though it is customary to leave alleys of a certain width between each bed, the roots of the plants will occupy the whole space in time, and will therefore be benefited by that space being enriched as well as the other.

Asparagus delights in a rich, deep, alluvial soil, and if the soil is shallow or poor it must be made good and deep. Now, the question of depth much depends whether the bed is to be a permanent one, or whether the Asparagus is to be prepared by a few seasons' growth for forcing purposes. I apprehend that as this vegetable is so easily and inexpensively forced in spring that very few who grow it do not force it also; if so, the labour of making the beds is very much lessened, and especially in shallow soils; whereas, if permanent beds are made, most of the soil would have to be wheeled away and be replaced by a more suitable compost. I have enriched the soil to the depth of 4 feet in places where it could be done by placing a layer of manure at the bottom, and then digging it in and mixing it well as the work goes on; then a layer of soil and another of manure,

At the time of planting level the soil down as fine as possible, then take 3 inches of it off, lay it in the alleys, then lay the plants out in rows, spreading out the roots well, and when all is done return the soil in a careful manner. Do the work during a period of fine weather if possible.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

THE work is well forward in this department, and some ground that would have only been dug over will be trenched instead. It has been frequently stated that our ground is trenched and manured of necessity to support the crops of vegetables through the drought of summer. The light shallow soil resting on gravel becomes exhausted of moisture very speedily; and unless we either water copiously at a time when labour is most valuable to us, or trench and manure well at this time or in the autumn, the most valuable of the culinary crops are comparative failures. When it is necessary to water vegetables it is best to do it thoroughly, and mulch over the surface of the ground after. Heavy clay soil has its disadvantages, but for the general run of seasons it is by far the best for kitchen-garden crops. For the earliest crops the light soil has an advantage, as not only do the seeds vegetate more readily, but the plants grow more freely afterwards. But the owner of heavy soil may do much to forward his crops by careful preparation of the soil, and also,

by having a supply of dry light soil just to sprinkle along the drills to cover-in the seeds. A few barrowloads will go a long way. Soil from the potting shed, if it is sifted and reserved for this purpose, is as good as anything: it is often wheeled out to the vegetable-mould heap, or used in some way just to get rid of it. Heavy soil is also greatly improved by trenching, but too much of the subsoil must not be worked-up at once. In our early days we had some training in a garden where the soil was both deep and heavy. The gardener trenched deeply, but he had an opportunity to work-in any quantity of stable manure, with occasional dressings from the vegetable-mould heap. When the ground was dug in winter it was thrown up quite roughly or ridged; when this was forked over in the spring the surface was quite loose and in the best possible condition for cropping. The crops of vegetables grown in that garden were of the very best. An effort was made to have all the trenching and winter digging done as early in the season as possible.

The early Peas were sown before the frost, which came upon us rather suddenly on Wednesday night. The first crop of Carrots, Early Horn, are sown under ground vineries: this allows us to sow much earlier than it would be safe to sow in the open ground. Between the rows of Carrots Radishes are sown. The Olive-shaped or French Breakfast Radish is the variety most approved, and it is sown also in the open ground for successional gatherings. The Radishes are cleared off before they do any injury to the Carrots. During open weather the roots of Garlic and Eschallots may be planted out if they have not been planted in November. The ground should be slightly ridged, and the roots be planted on the ridges a foot between the rows and about 9 inches between the plants. It is best to plant on ground that has been well manured for the preceding crop. Lettuce will also be sown under glass in a few days. Hicks's Hardy White Cos is the best strain of Paris White Cos we have ever had. This variety also stands well over the winter months. The plants would not escape the sparrows unless the rows were covered with Pea-protectors.

PINE HOUSES.

We have a house of Queens, a few of which are throwing-up, and all of them will do so as soon as the bottom heat is increased. At the same time the temperature of the house will be raised to 66° at night, or even 70° in mild weather. The fruit will be ripe early in June; that throwing-up now will be ripe in May. Ventilation is carefully attended to even in dull weather, with a low temperature out of doors. The top ventilators are open a very little an hour before midday, and closed about 2 P.M.; if they are opened half an inch it will do the plants good. To keep up the temperature it is necessary to heat the pipes considerably; and until the days are longer it is better not to have the evaporating troughs filled with water—that is, if they are cast on the pipes. If they are moveable troughs they may be kept filled with water, as the heat does not act upon it sufficiently to cause much vapour under ordinary circumstances. Snokers have been kept cooler than we liked to have them this winter; but it has kept them back, and they will not be ready to be placed in their fruiting pots for at least six weeks. The plants look very well, and will now improve rapidly.

CUCUMBER HOUSE.

Seeds were sown about two weeks ago, and the plants are now ready for potting-off, the soil for potting them being well warmed and moderately dried. The potting material at this season is turfy loam three parts to one part of leaf mould. The plants do best if they are placed on a shelf near the glass. When well established in the 48-sized pots the plants are ready for planting out. For winter Cucumbers the soil ought not to be deep, certainly not more than a foot. There ought also to be plenty of drainage underneath; and before the compost, which ought to be open, is placed over it, some turf with the grass side down must be laid over the drainage to prevent the compost from mixing with it. When the soil has been in the house a week the plants may be put out. The trellis to which they are trained should be a foot from the glass. Sometimes the trellis is made of wood, but this causes it to be necessarily heavy, and to exclude light. A light trellis of ironwork is much better. It is a little more expensive at first, but much more convenient, to have the trellis made moveable.

STRAWBERRIES.

We have placed a second lot of Black Prince in an early vinery with a temperature of 55°. We would rather that it had been 45° to begin with, but the temperature cannot be altered for a few Strawberry plants. There is plenty of atmospheric moisture, and as soon as the plants are fairly started, which will be before they are at all shaded by the Vines, the plants will be removed to the Pine house. We still grow Black Prince for the earliest; it is always sure to carry a crop, however early the plants may be started. The next in succession is Keens's Seedling, followed by President. Strawberries will stand a good deal of hard forcing if the plants are placed near the glass.

PLANT STOVE AND ORCHID HOUSES.

We frequently allude to temperature in the plant stove. Our house has been kept this winter at 60° for a minimum, with a

rise of 5° by day, or 10° if the days have been mild with a little sunshine. The days and nights are now cold with cutting east winds, and the lower temperature only has been kept up. In our house are a few Orchids, such as *Phalanopsis* and *Oypripediums*, that require a winter temperature of 60° to 65°. *Nepenthes Rafflesiana* also requires a high winter temperature. The bulk of the plants would be much better in a temperature of 55°: they rest better, are more easily kept free from insect pests, and start more strongly into growth when a higher temperature is kept up from the 1st of March onwards. *Poinsettias* that have finished flowering, or rather that have lost their floral bracts, will be removed into a house with a lower temperature and rather drier atmosphere. They have made a splendid show for us this year. We had scores of heads with from thirty to forty floral bracts to each, and that measured from a foot to 15 inches across.

We commence repotting specimens of any hardwood plants that require it this month, and would already have done so if the weather had not changed. If it is intended to make handsome specimens of the plants the potting must be done carefully, and suitable compost must be used. *Dipladenias*, *Rondeletias*, *Passifloras*, *Euphorbias*, and indeed the largest proportion of hardwood stove plants, thrive best in a compost of about two parts turfy peat to one of turfy loam. Both the loam and peat should be laid up about three months before using it. We find *Ixoras* do best in turfy peat without any other ingredient, except, of course, silver sand if it is required; but there is sometimes peat to be found that contains naturally a sufficient proportion of sand. *Franciscea*s succeed well in turfy peat, a little leaf mould, and sand. A very large proportion of the softwood plants do best with a little leaf mould added. All decaying wood should be picked or sifted out of it. The roots should be well watered if necessary a day before repotting, as the longer the plants will stand without any water being applied to the roots after repotting the better.

Orchids require all the light it is possible to give them at present. Some *Lælias* and *Cattleyas* have just completed their growth; others, such as *Cattleya Warneri*, *C. gigas*, &c., are starting into growth. In either case light and an increased temperature is necessary. The above have been placed in a house with a night temperature of 60°. *Cattleyas*, *Lælias*, *Dendrobiums*, &c., at rest are in a house from 50° to 55° at night. Cleanliness everywhere on plants, paths, and stages, as well as the glass and rafters, is all-important.

FLOWER GARDEN.

The fine weather urged us to be attending to the borders of herbaceous plants, some of which are now starting into growth, and the young shoots in mild weather are a prey to slugs and other depredators. We do not expect many flowers at this season; the *Chrysanthemums* have just been removed, but a few *Violets* are to be found. The *Christmas Rose* is in full beauty; *Jasminum nudiflorum* and *Chimonanthus fragrans* on walls should be in every garden. *Roses*, dwarfs and standards, are safest with some nice rotted manure round the roots. The buds are starting freely, but it is wisest not to prune until near the end of February. *Dahlia* roots must be examined, as the old stalks that have been left on sometimes decay and destroy the eyes at the base. We are preparing fermenting material for a frame which will hold cuttings of *Verbenas*, *Lobelias*, *Ageratum*s, and other bedding plants. We have also been repotting zonal *Pelargoniums*, pricking *Lobelias*, &c., out in boxes. They are better to have a little heat until established.

—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

BRIGHTON (Spring Show). March 22nd and 23rd. Mr. G. Webley, Holm Wood, Westbury-upon-Trym, Hon. Sec.
ROYAL CALLEDONIAN HORTICULTURAL SOCIETY. Shows April 5th, July 5th, and September 18th.
WESTMINSTER AQUARIUM. April 12th and 18th, May 10th and 11th, May 30th and 31st, July 5th and 6th, October 4th and 5th.
MAIDSTONE (Roses). June 21st. Mr. Hubert Bensted, Roekstow, Maidstone, Sec.
SPALDING. June 21st. Mr. G. Kingston, Sec.
SOUTHPORT. July 6th, 7th, and 8th. Mr. E. Martin, Sec.
HELENBURGH (Roses). July 19th and 18th. Mr. J. Mitchell, Sec.
BRIGHTON. July 29th. Messrs. C. Jessop & E. Rawnsley, Hon. Secs.
DUNDRE (International). September 7th, 8th, and 9th. Mr. W. R. McKelvie, 26, Euclid Crescent, Sec.

TRADE CATALOGUES RECEIVED.

Francis & Arthur Dickson & Sons, 108, Eastgate Street and "Upton" Nurseries, Chester.—*Catalogue of Vegetable and Flower Seeds, &c.*

Hender & Sons, Plymouth.—*Illustrated Catalogue of Vegetable, Flower, and Agricultural Seeds.*

Thomas Bunyard & Sons, Maidstone.—*Descriptive Catalogue of Vegetable, Flower, and Agricultural Seeds.*

The Pine-Apple Nursery Company, Maida Vale, London, W.—*General Catalogue of Garden and Farm Seeds, Gladiolus, Bulbs, &c.*

Smith & Simons, 86, Howard Street, St. Enoch Square, Glasgow.—*Cultural Guide and Descriptive Seed Catalogue.*

G. O. Short, Market Place, Stokesley.—*Descriptive Catalogue of Vegetable and Flower Seeds.*

Louis Van Houtte, Royal Nurseries, Ghent, Belgium.—*Catalogue of Gesneriaceous Plants, Begonias, Dahlias, Roses, &c.*

TO CORRESPONDENTS.

*. All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (E. J. J. E.).—Macintosh's "Book of the Garden," and the "Cottage Gardener's Dictionary." (J. Brown).—Gordon's volume "The Pinetum," describes all the Conifers, but there are no plates. In Loudon's "Encyclopaedia of Plants" there are woodcuts of the foliage and cones, and of flowering plants.

DOCTOR HARVEY APPLE (H. L. E.).—It is not the same as "Waltham Abbey Seedling." This is a modern variety, but Doctor Harvey is one of the oldest. Parkinson in the reign of Queen Elizabeth describes it as "a faire, grate, goodly Apple, and very well relished." You are correct in saying it is "one of the best cooking Apples."

PEARS NOT RIPENING (F. Holloway).—The pyramidal-shaped Pear is *Beurré Rance*, and the other *Jean de Witte*. We think you gather them too soon, and keep them in a room too warm.

WILD FLOWERS (G. S.).—We cannot say more than that they will conclude when all our native flowers have been included.

MUSHROOMS IN CUCUMBER HOUSE (H. W.).—The temperature required for Cucumbers is too high for the growth of fleshy Mushrooms, but they would, nevertheless, grow, but be poor as compared with those grown in a lower temperature. You will need to have a bed of fresh horse droppings a foot thick, and beaten very firm, and when the temperature of the droppings has subsided to 80° you may then insert pieces of spawn not less than an inch or larger than 2 inches square. Insert these 2 inches deep, and make the surface of the bed again firm after filling up over the spawn. In a week after sowing cover the bed with soil in a moderately moist state, so that it may be beaten firm and smooth, the soil being good turfy loam and 2 inches thick. The Mushrooms will appear in about six weeks, when the bed is to be kept moist, avoiding overwatering. The pieces of spawn should be inserted about 9 inches apart, and for the size of the bed you name you will require about two bushels of spawn, or a "brick" per square yard. We shall be obliged by particulars of the heating from the kitchen range.

REPORTING STAGE PHALANGIUMS (A Subscriber).—Report them now if they have already been stopped; but if not stopped, do so now, and report about the middle of February, giving them their blooming pots; and by paying attention to tying out the shoots and affording a light position with free air-giving, watering carefully, and applying liquid manure when the pots are filled with roots, you will obtain a quantity of bloom. Keep cool, but safe from frost.

FUCHSIAS FOR EARLY FLOWERING (Idem).—Out in the plants and place in the temperature you name, and when they are making fresh shoots report, keeping moist by sprinkling overhead morning and evening, and watering carefully at the roots until those are working freely in the fresh soil, then supply water more freely. Shift into the blooming pots when the roots are showing at the sides of the pots.

SELECT PANTRIES (G. F.).—*Scylla*: Locomotive, Mrs. Horaburgh, Mrs. Knight, Cherub, Finale, and Masterpiece. *Fancy*: Lady Boss, Miss Macmeeking, Rev. H. H. Dombain, William Baird, Pandora, and Little Kittie. The best mode of striking cuttings is either under hand-lights or in cold frames in light soil with a fourth of silver sand, taking the young side shoots, and inserting in April or May for autumn flowering, and in August or early September for spring. Particulars of treatment are given in "Florists' Flowers," which may be had free by post from our office for five penny postage stamps.

PLANTS FOR NORTH WALL (W. H. Midwinter).—There are no flowering plants suitable for a north wall except, perhaps, *Jasminum nudiflorum*, which succeeds well and flowers at this season. *Cotoneaster microphylla* has very neat evergreen foliage and fine red berries, but does not flower well against a north wall. *Ampelopsis Veitchii* is a neat plant for a north wall, also *A. heterocarpa*; but the finest of all plants for a north aspect are Ivies, which in the green and variegated forms are very handsome.

GRAFTING *PIENA NOBILIS* (C. J. D.).—It may be successfully grafted, but the plants are never so shapely as those grown from seed, though if leaders are employed for grafting there is no great difference between grafted and seedling plants. The stock most commonly employed is the common Silver Fir (*Picea pectinata*), and the time to operate is in March or April just before the tree from whence the scions are taken commences to swell its buds. Budding is not, that we are aware, resorted to, and neither it nor grafting are desirable modes of propagating this finest of the Piceae. *Aranea imbricata* is not grafted. All Conifers of horizontal side-branching habit are best from seed.

EUCALYPTUS AMAZONICA IN GREENHOUSE (Amateur).—This very desirable bulbous plant cannot be grown satisfactorily in a greenhouse. It requires a stove temperature—a brisk moist heat when growing, and to be rested in a cooler and drier atmosphere. Unless you decide to have your house divided,

and one of the compartments kept at stove temperature, we should advise you to discard the *Eucalyptus*. Your method of heating is of the worst kind. We should obtain a stove boiler and fix it either inside the house or in an outhouse, having 2-inch hot-water pipes, of which you will require two rows—i.e., a flow and return, along two sides and one end, or both if you have not a doorway at the end, or all around excepting doorway, or an equivalent of four rows in front and at one end. If you have a division for the stove compartment you would require double the quantity of piping. The fruit trees in pots may be introduced to the greenhouse early in next month.

SELECT BRONZE PHALANGIUMS (J. M.).—Black Douglas, Mrs. Harrison Weller, Prince Arthur, Rev. C. F. Peach, W. E. Gumbelton, and W. R. Morris.

SALT FOR DESTROYING WEEDS (An Eleven-years Subscriber).—We have not noted the particular quantity per square yard required, but we should think about 2 lbs. It is best applied during dry weather in April or May. It is not, however, nearly so good a weed-destroyer as that noted at page 868 of last volume in answer to "J. R." which see.

LEAK AND CELERY FOR EXHIBITION (Idem).—Ayrton Castle Giant Leak is a fine large kind, but we have it this year surpassed by "Carantan." Of Celery, Leicester Red (Major Clarke's Solid Red) is a fine red, but a larger is Ivory's Nonsuch Pink. Williams's Matchless White is very good, a larger white kind being Seely's Leviathan. Sow the Leak outdoors in March, and the Celery in gentle heat early in March, keeping near the glass to prevent the seedlings drawing, and prick-out in good rich soil outdoors in a sheltered situation when the seedlings have a pair of leaves besides the seed leaves.

VINES AND STRAWBERRIES (Constant Reader).—You should plant Alicante instead of Buckland Sweetwater. Muscat Escholata is similar to Muscat of Alexandria. You might plant the fruiting cane of Alicante and fruit it this season, but do not shake out the roots, as it will be necessary for you to do with those Vines intended to be permanent. The Strawberry plants in pots and the Peach trees in pots would both succeed in the warm house. Place the Strawberry pots on a shelf near the glass. They will do better if you can start them in a low temperature with the Vines to begin with.

FRUIT TREES FOR WALL (West Coast).—On the highest portion of the wall plant Royal George Peach and Pine Apple Nectarine. The trees ought to be 90 feet apart. We name three of each sort, and advise you to plant the Pines or Pears on the wall facing south-west. Peaches: Royal George, Early York, and Bellegarde. Nectarines: Pine Apple, Elruge, and Victoria. Pines: Green Gage, Jefferson, and Coe's Golden Drop. Pears: Louise Bonne of Jersey, Marie Louise, and Doyenné du Comice. Cherries: May Duke, Black Tartarian, and Elton. It is better to have them worked on the free stock for walls. Pyramid Apple trees would come into bearing in two years. Plant the trees 9 feet apart. They would probably last forty or fifty years.

ROSES IN ENGLAND (J. A. C.).—Roses were sold in the flower market of Athens, and many varieties of Roses were cultivated by the Romans. They, we have no doubt, introduced them into England, and had them in the gardens of their numerous villas here. In the fifteenth century the Red and White Roses were the distinguishing badges of the Royal houses of York and Lancaster; and Lyte, the earliest of our writers on plants, in 1578 names many varieties as then cultivated in our gardens. Linacre brought to us from Italy in 1624 the Damask Rose.

GRAFTING (G. W. J.).—We know of no special work on the subject. The directions in our "Fruit Garden Manual" are sufficient, and you can have it for five postage stamps.

ASPLENIUM TRICHOMANES VAR. MAJUS (G. McDougall).—Mr. Lowe does mention this, but says that it is a large growth of the normal form. The climate of Devon increases the size of the original.

DIPLADENDIAS, &c., FOR FLOWERING IN JULY (Amateur).—Much depends on the heat at your command, and the character of the summer. About the second week in February would be a good time to start the plants, regulating the heat according to their growth.

NAMES OF FRUITS (E. M. Stone).—105, Chantrelle; 249, Glogli (N.B.)—Pears—1, Zéphirin Grégoire; 2, No Plus Meuris; 3, Doyenné Goubault; 4, Crassane. Apples—1, Salwood's Ratnette; 2, Not known; 3, Golden Harvey; 4, Pearson's Plate. (W. F. C.).—1, Hollandbury; 2, Boss Fool; 3, Claygate Pearmain; 4, Not known; 5, Winter Greening; 6, Delaware.

NAMES OF PLANTS (S.).—*Viburnum*: *Tinus*. The Conifers cannot be named from the scraps sent. (Camel).—1, *Adiantum teneosum*; 2, *Pellaea hastata*; 3, 4, forms of *Selaginella Martensii*; 5, *Peziza coccinea*.

POULTRY, BEE, AND PIGEON CHRONICLE.

BRISTOL POULTRY SHOW.

(Continued from page 17.)

BRAHMAS.—The Dark cockerels mustered twenty-nine entries. First (Lingwood), a neat bird of beautiful colour, and well grown. Second (Hamilton), a well-shaped bird, but getting a little yellow in the saddle. Third (Lingwood), a stout chicken, not rather inclined to be coarse in comb. Fourth (Lyon), was a nice bird. Pen 818 (Wright), highly commended, was a pretty bird, neat in comb, the best coloured bird in the class; but he is rather narrow, and wants time. Pen 822 (Le Seur), highly commended, was also a good bird. Pullets.—First (Perceval), pen 857, a prettily pencilled bird, but small. Second, 868 (Lingwood), a fine well-shaped pullet, with nice markings. Third (Newnham and Manby), a good pullet, and deserved her position. Fourth, 860 (Perceval), a moderate bird, tolerably pencilled, but small and deficient in leg-feathering. We liked many pens in the class much better. The Hon. Miss D. Pennant and the Rev. J. D. Peake showed birds we preferred. Pen 851 (Ansdell), unnoticed, we thought a good bird; she was well feathered, and a splendid colour, and as size has not been a very great consideration with the Judges in their Brahma pullet awards this season, we think they might have placed her in the prize list. In old cocks Mr. Lingwood was again first with a grand bird; Mr. Ansdell

second with a neat bird of good colour; and Miss Pennant's bird well deserved the third prize. Pen 875 was commended: we could not understand why he obtained this distinction. Pen 382 (Rev. R. G. Watson), a fine bird, was disqualified on account of the tail being "stained and dressed." Hens.—First and cup (Newham & Mauby), a fine well-marked hen. Second (412, same owners), a fine hen, but not so well feathered in the leg as the first-prize pen. Pen 403 (Rev. J. D. Peake) was third, but we liked Mr. Lingwood's pen (387, very highly commended) in many respects much better.

Light.—The cockerels only numbered eighteen entries. Mr. Lingwood was first with the bird we admired so much at the Palace, and which only there obtained the fourth position. Mr. Leno showed a good bird that was second. Third (Webb) looked a little creamy. With the exception of the winner we thought them a very moderate lot. Pullets were more numerous and a better class than the cockerels. Mr. Haines was first with a fine bird, good in colour and well marked in the hackle. Mr. Leno was second with a good bird, but the white was not so pure; and Captain Savile's bird obtained the third prize: we think we should have transposed their positions. Mr. White's fourth-prize pen was good in colour but small. Pen 438 (Widdowson), highly commended, and pen 439 (Webb), very highly commended, we admired very much. Cocks.—Mr. Lingwood's first-prize bird deserved his position. The second we did not admire. The third pen, 481 (Haines), pen 479 (Perovial), highly commended, and others we thought in many points his superior. Hens.—First (Mrs. A. Tindal) a grand bird. We think we have seen her before and noticed a peculiar curl or twist in all the saddle feathers as they reached the tail; it is a great defect. In other respects we think her unapproachable. Pen 494 (Turner) was second, in splendid condition; third (Watson) a good hen. We also liked much pen 506 (Rev. R. G. Watson).

NORWICH SHOW OF POULTRY, &c.

THE first Show of the Central Norfolk Poultry Club took place on the 5th and 6th inst. in the Corn Hall at Norwich. The building is a splendid one for such a purpose, the light being equal and good. Billett's pens were used on this occasion. Unfortunately some capital pens arrived too late for competition, but the number of empty pens was unusually small. The entries numbered 501, the quality of the poultry especially being exceedingly high.

Dorkings headed the list with four classes, the Dark Greys being very good in every respect, but the other varieties were poor, with the exception of those from Mr. Wren, which were, however, as before stated, too late. The cup was awarded to a Dark Grey cock. **Cochins**, four classes: Buff cocks, first-and-cup, as well as cup for the county, a grand rich even cockerel; second a cock good in shape, but not equal in colour. In hens (Buffs) were some grand birds, large, shapely, and in fine order; the second losing in colour only. Any other cocks, first a massive Partridge, a shade too dark in colour for our taste; second smaller but good. In hens, which was not one of the best classes, first was a very good Partridge, and second a White pullet. **Brahmas**, four classes: cocks, Dark, first-and-cup and members' cup a very large cock, closely pressed, however, by more shapely and better-marked birds. Hens: a handsome pullet first, second a hen; a fair class. Light cocks a good lot, the first a most perfect bird, second close upon it. Hens a nice lot also. In *Spanish* were some very good birds, and the competition close; the first cock won the cup also, and is a bird that must make his mark; second a bird little inferior. Hens very fine, and little to choose in the three first birds. *French* a fair lot, the winners *Créves*. *Game*, Black Red cocks were a fair lot, but not as good as we could have expected, and little to choose between the lot. Hens, Black Reds, better than the cocks. Brown Red cocks poor except the winners, which were both cockerels. Hens of that colour but four, and these good. Duckwings were very good, and the cup and county cup was won here by a grand pen of birds. Piles poor except the first-prize cockerel. *Hamburghs*, Gold-pencils, but a moderate lot; the Gold-spangles better; the Silver-spangles by far the best, and the cup awarded to a grand pen of young birds. Black *Hamburghs* were pretty good, although some had defective combs. *Bantams* were placed too high to show to advantage. Both the cocks and hens of the Black Red varieties were good, the winners very gamey and close in feather. The gems, however, of the Bantam section were the pen of Duckwings to which was awarded the cup; the next in point of quality the Piles, which were, however, looking somewhat flat. The variety of Bantams were a large class, and two firsts were allowed, one going to a pen of Gold Sebrights and the other to Blacks, the second also being Blacks. There was one good pen of Booted. Any other variety were first-and-cup Gold Polands, second Malays, and very highly commended Gold Polands.

Aylesbury Ducks only two pens; Rouens more numerous and good, while the Variety class contained Malagas, Mandarins,

and Whistlers. There were some very large *Geese*, Toulouse, but not the best in colour. *Turkeys* good, the cup awarded to them. The quality of the local birds ran very high, in many cases the cups for open competition being won by these exhibits. The Selling class was large, but we cannot say much for the quality.

Pigeons were fair classes, but the quality not so good as we expected to find, the Carriers being positively poor; but the Dragoons a grand lot, the first award going to heavy soft-fleshed-eyed birds, not at all to our taste, but evidently the London style. These were Yellows, very good in all other points; second a good pair of Silvers, scarcely decided as to colour of bars. Antwerps poor except the first Silver. Bars a moderate lot, and mostly Blacks. In Pouters Whites won the prizes, these being in the height of condition. Fantails good, but would have been much better shown singly. Tumblers, Almond, a good class, as also the Any other variety, in which pen 440 was disqualified, else the cup for the section would have been awarded here. The cause was a wing feather marked, for what purpose we know not, but to say the least it was a grave oversight. Jacobins only poor as a lot, first White and second Yellows. The Variety was a capital class, some good Owls both foreign and English, Trumpeters, Frillbacks, and Archangels being shown. The Selling class was poor.

DORKINGS.—Coloured.—Cock.—1 and Cup, T. & H. Heath, Norwich. 2, C. Loring, Gillingham Rectory. *vhe*, J. Ward. *he*, Rev. E. Bartrum, Henry Lingwood, E. H. Willet. *c*, J. C. Davies, Mrs. Berners, H. A. Riggs. *Hen*.—1, Rev. E. Bartrum, Berkhamstead. 2 and *hc*, Mrs. B. B. Sapwell, Aylsham. *vhe*, H. Lingwood.

COCHINS.—Any other variety.—Cock.—1, T. & H. Heath. 2, C. Loring. *c*, J. E. Phipps. *Hen*.—1, T. & H. Heath.

COCHINS.—Cinnamon or Buff.—Cock.—1 and Cup, Lady Gwydyr, Ipswich. 2, Mrs. C. Berners, Yoxford. *he*, T. Asplin, Henry Lingwood. *c*, Rev. C. Gilbert, Henry Lingwood. *Hen*.—1, Lady Gwydyr. 2, Lieut.-Col. Bignold, Norwich. *hc*, T. Watson, Lieut.-Col. Bignold (2). *c*, Mrs. C. Berners.

COCHINS.—Any other variety.—Cock.—1, Lady Gwydyr. 2, G. E. Porter, Sandy. *hc*, G. B. C. Breese. *c*, G. B. C. Breese. *Hen*.—1, Lieut.-Col. Bignold (2). *hc*, T. Asplin, Accrington. 2, Lady Gwydyr. *he*, F. Bullard, Lieut.-Col. Bignold, G. B. C. Breese.

BRAHMAS.—Dark.—Cock.—1, Horace Lingwood, Creeting, Needham Market. 2, Mrs. H. E. Buxton. *vhe*, Lady Gwydyr. *c*, W. Holmes, Newham & Manby, Major C. J. Ewen, Rev. C. Gilbert, H. Saberton. *Hen*.—1, Lady Gwydyr. 2, J. S. Pearson, Great Melton. *hc*, Horace Lingwood, Mrs. Berners, E. H. Willet. *c*, W. Branton, W. Holmes.

BRAHMAS.—Light.—Cock.—1 and Cup, Horace Lingwood. 2, P. Haines, *hc*, P. Haines, H. Watson. *c*, E. V. Snell. *Hen*.—1, Horace Lingwood. 2, P. Haines. *vhe*, Mrs. Peel. *hc*, R. Bird. *c*, E. J. Bird.

SPANISH.—Cock.—1 and Cup, W. J. Nichols. 2, S. J. F. Stafford, Great Yarmouth. *vhe* and *hc*, F. Waller. *c*, J. T. Dixon, H. Blower. *Hen*.—1, F. Waller, Wood Green, London. 2, W. J. Nichols, Saffron Hill, London. *vhe*, H. B. French. *hc*, E. Holmes, H. J. Law.

FRENCH.—1, W. J. M. Cullack, Littleport. 2, A. W. Darley, Bury St. Edmund's. *c*, W. H. Hackblock.

GAME.—Black Red.—Cock.—1, L. Walter, Newark. 2, W. Wainwright, Warwick. *vhe*, J. Mason. *hc*, T. L. Fellowes (2). *Hen*.—1, H. E. Martin, Fakenham. 2 and *hc*, P. Paynton, Norwich. *c*, F. Simpkins, J. C. Davies, J. Mason, W. Long.

GAME.—Brown Red.—Cock.—1 and 2, H. E. Martin. *hc*, R. H. Gillett. *Hen*.—1, H. E. Martin. 2 and *hc*, R. H. Gillett, Halvergate. *c*, W. Long.

GAME.—Duckwings.—1 and Cup, H. E. Martin. 2, T. Doewra, Colchester. *hc*, D. W. J. Thomas. *Pile*.—1, P. Paynton. 2, J. Oscoff, Ilkestone. *c*, H. R. Ems, P. Paynton.

HAMBURGERS.—Gold pencilled.—1, W. K. Tickner, Ipswich. 2, Col. Cockburn, Norwich. *hc*, R. Brown, A. Silver, H. Pickles. *Gold spangled*.—1, W. K. Tickner. 2, H. R. Plattin, jun.

HAMBURGERS.—Silver pencilled.—1, H. Pickles, Earby. 2, H. R. Plattin, jun. *Fakenham*. *c*, F. W. Meynell. *Silver spangled*.—1 and Cup, Rev. T. L. Fellowes, Norwich. 2, H. Pickles. *hc*, Holmes & Destner. *c*, C. Loring, T. E. Thairle, H. R. Plattin, jun.

HAMBURGERS.—Black.—1, T. A. Wright, Great Yarmouth. 2, J. P. Case, Testerton Hall. *hc*, H. R. Plattin, jun. *hc*, H. Pickles.

DUCKS.—*Aylesbury*.—1, Cup and *vhe*, A. & W. H. Silvester, Sheffield (Gold Polands). *hc*, J. B. Leister (Malays). *hc*, J. F. Struzell (Brown Malays). *Rev. C. Gilbert* (Malacca Game). *c*, Rev. W. C. Stafford (White Leghorns). *F. P. Smith* (Leghorns). *E. A. Lees* (White-crested Black Polands). *J. F. Breeze*.

GAME BANTAMS.—Black or Brown Red.—Cock.—1, F. Bennett, Ipswich. 2, W. Adams, Ipswich. *hc*, E. H. B. Smith, W. Adams, J. S. Pearson. *Hen*.—1, J. S. Pearson. 2 and *hc*, F. Bennett. *hc*, J. S. Pearson, C. E. Dade, W. Long (2).

GAME BANTAMS.—Duckwings.—1 and Cup, W. Adams. 2, J. Oscoff. *Pile*.—1, R. Brownlie, Kirkcaldy. 2, J. Oscoff. *hc*, J. S. Pearson.

BANTAMS.—Any other variety except *Game*.—1, R. H. Ashton, Manchester. *hc*, J. W. Holmes, Thetford. *hc*, Rev. J. C. Martyn, W. H. Hackblock, T. J. C. Rackham, W. Durrant (2), W. Adams, A. Vander Meersch, *c*, F. Bullard, R. Woods, W. H. Hackblock.

DUCKS.—*Aylesbury*.—1, E. V. Snell, Barrowden. 2, H. Hoff, Lynn. *Rouen*.—1, Mrs. C. Berners. 2, J. H. Waite, Norwich. *hc*, E. V. Snell, R. H. J. Gurney, Rev. W. C. Safford, Rev. T. L. Fellowes, Mrs. H. E. Buxton, H. Densett, *c*, T. H. Heath, R. H. J. Gurney. *Any other variety*.—1 and *vhe*, A. & W. H. Silvester. 2, F. Bullard, Norwich (Carolina). *hc*, W. H. Hackblock (Cayuga). *F. Bullard* (Mandarins). *c*, S. W. Stafford (White Muscovy).

GESE.—1, J. P. Case. 2, Mrs. Thornhill, Thetford. *hc*, E. V. Snell, E. J. B. B. Berners.

COCHINS.—Black Norfolk.—1, H. J. Gunnell, Milton. *Any other variety*.—1, Cup and *hc*, H. J. Gunnell. 2, Mrs. A. Mayhew, Great Baddow.

NORFOLK SPECIAL PRIZES.—1 and 2, Mrs. B. B. Sapwell (Coloured Dorkings). *hc*, T. & H. Heath (Silver-Grey Dorking). *G. Warner* (Brahma-Dorking). *T. Norton* (Dorking).

PHEASANTS.—1, F. Bullard, Old Catton (Silver). 2, H. Colbeck, Harleston (Golden).

SELLING CLASS.—Cock or Drake.—1, W. Durrant, Great Yarmouth. 2, Miss M. E. Chapman, St. Nicholas (Aylesbury drake). *vhe*, A. & W. H. Silvester, *hc*, Mrs. B. B. Sapwell (Coloured Dorking). *Rev. W. C. Safford* (Rouen drake). *c*, J. Ewen (Dark Brahma). *P. Haines* (Light Brahma). *W. Carter* (Black Spanish). *E. Holmes* (Black Spanish). *H. Densett* (Brahma). *L. Wren* (Dark Brahma). *F. Bullard* (Mandarin drake). *T. A. Wright* (Black Hamburgh). *c*, Rev. W. C. Safford (White Leghorn). *H. E. Martin* (Brown Red). *Mrs. Griggs* (Cuckoo Japanese Bantam).

SELLING CLASS.—Hens or Ducks.—1, A. & W. H. Silvester. 2, T. F. Rackham, Norwich (Black Cochins). *vhe*, J. N. Waite (Dorkings). *W. Carter*. *A. & W. H. Silvester*. *hc*, W. White (Black Spanish). *G. S. Pearson* (Dark Brahma). *Mrs. C. Berners* (Coloured Dorkings). *H. Densett* (Brahmas). *F. Bullard* (Mandarin Ducks). *c*, C. J. Ewen (Dark Brahma). *Rev. C. J. Martyn* (Light Brahma). *E. Holmes* (Spanish). *Mrs. Griggs* (Dorkings). *W. Branton* (Brahmas).

PIGEONS.

CARRIERS.—1, H. M. Maynard, Holmewood, Isle of Wight. 2, T. Roper, Barham, Ipswich. *etc.* H. M. Maynard, H. J. Nichols. *Ac.* H. Thurlow (3).
DRACONS.—1, Cup, and 2, F. Graham, South Birkenhead. *etc.* E. Woods (3).
Ac. A. W. Wren. 3, W. Smith, F. Graham.
ANTWERPS.—1, J. Bradley, Birmingham. 2 and *Ac.* Hon. G. M. Sutton, Thurlow Square, London. *etc.* C. Gamon (3).
BARBS.—1 and 2, H. M. Maynard. *etc.* P. H. Jones. *Ac.* A. P. Byford, F. Waller.
POUTERS.—1, H. Thurlow, Burham Market. 2, L. & W. Watkin, Northampton. *Ac.* W. Nottage, H. Reynolds.
FANTAILS.—1, J. F. Loversidge, Newark. 2, J. Walker. *etc.* and *Ac.* H. M. Maynard.
TUMBLERS.—1, J. E. Palmer, Peterborough. 2, H. Yardley, Birmingham. *etc.* W. Nottage, L. E. Willett. *Any other variety*.—1 and *etc.* L. E. Willett, Norwich. 2, H. Yardley. *Ac.* A. Vander Meersech.
JACOBS.—1 and 2, A. Vander Meersech, Tooting. *etc.* P. H. Jones.
TURKEYS.—1, G. H. Gregory, Taunton. 2 and *etc.* P. H. Jones. *c.* A. Vander Meersech.
ANY OTHER DISTINCT VARIETY.—1, F. Chambers, Northampton (White Owls). 2, P. H. Jones, Fulham, London. *etc.* P. H. Jones. A. & W. H. Silvester. *Ac.* C. Gamon, G. H. Gregory.
SELLING CLASS.—1 and *Ac.* J. F. Rackham (Carriers and Barbs). 2, A. Vander Meersech. *etc.* C. Norton.

The Judges were Messrs. Percival and Hutton.

WIGTOWNSHIRE SHOW OF POULTRY, &c.

This was held on the 8rd inst. in the Queen's Hall, Stranraer. The pens were of wood, with wire fronts; the entries being uncommonly good for so out-of-way place—viz., something like five hundred in all. The prizes were small, but there were several extras given in the shape of plate and useful articles of cutlery.

Spanish were first on the list, and these were a grand class, old birds winning the prizes. *Silver-Gray Dorkings* were (as usual on the west coast of Scotland) superior, and the winners good; but Dark Greys were better, the cup going to a substantial pair of that variety. *Brahmas* were very good, and all Dark birds; the first, a fine massive pen, won also the extra. In *Cochins* there were some grand hens, all Buffs, and one grand cock in the first-prize pen. *Game*, Black Reds, were very good, some of the hens being of the highest quality; but the cup was awarded to a sound-coloured pen of Duckwings. *Game Bantams*, Reds, were not good, and the variety class only moderate; the first Silver Sebrights, second Pile Game, and third Gold Sebrights. *Hamburghs* were a fine lot, the winners leaving little to be desired; the first in Silver-pencils won also the cup for the section and the cup for the best pen in the Show. *Houdans* were pretty good, but the best had the Crève comb; a fair pen of chickens coming second with the lowest style of comb. In the Variety class first were Silver Polands, second Malays, and third Scotch Greys, all very good of their kind. *Ducks*.—Only the winners of Aylesbury were of note, but they were very good; the Ronens were very good, the first large and very well pencilled. With the exception of the first in Selling class (Silver-spangles) there was nothing good. *Turkeys* and *Geese* small, but otherwise good.

Pigeons were shown in pairs, and the pens too small for the purpose, especially those for Fantails and Pouters. In the last-named the first and second were Blue-pied, and third White; a good pair of Measles very highly commended. Carriers were pretty good, and the winners Blacks. Tumblers were good, Agates winning first and second, and third Long-faced Black Mottles. Fantails were very good in both style and carriage. Jacobins good as regards the winners. Nuns and Barbs good, but the latter young. Magpies were moderate, and the winners Black; but the crack pen of the Show was a pair of White-barred Red Swiss in the Variety class. A class was provided for common Pigeons, the first going to a pair of Blue Chequers of very original type of head.

In a recent number of one of your contemporaries our awards in this class were rudely criticised without once attempting to set us right as to the type of bird required in Scotland, but we think it would be as well for the writer to give us a standard before attempting to lecture those who assisted in the settlement of this style of bird more than a dozen years ago.

There was a good show of *Cage Birds*, especially in Goldfinches and foreign varieties.

SPARKER.—1, 2, and *Ac.* W. Martin, Stranraer. 2, J. Ross, Lochans Mills. *Ac.* W. Martin. 3, Ross, W. Withers, Stranraer.
DORKINGS.—*Silver-Gray*.—1, G. W. Congreve, Carlisle, Castle Douglas. 2, W. Martin. 3, A. Withers. *Ac.* G. W. Congreve, A. M'Dowall, Anstruther. *Any other colour*.—1, W. Martin. 2, R. Reed, Hollinburn. 3, A. Mather, Kilmarnock. *Ac.* R. Reed, A. Withers, R. V. A. Adair, Giltoun.

BRAHMA FOOTBALLS.—1 and 2, W. Martin. 2, P. M'Lean, Duchra. *Ac.* A. Withers, A. Hutchinson. *c.* R. Maxwell, Dumfries (3).

COCHIN CHINAS.—1, W. Martin. 2 and *Ac.* A. Hutchinson. 2, Miss E. A. Knott, Dumfries. *Ac.* A. Withers. *c.* W. Martin, J. M'Lealand, Lochans.

GAME.—*Black and other Reds*.—1, W. Martin. 2 and 3, T. Parker, Southwick Station. *Ac.* W. Martin (2). J. A. Mather, Closeburn (3). *c.* M. Marshall, Drumore.

DUCKWINGS, *Whites*, and *other Greys*.—1, J. A. Mather. 2, T. Kennedy, Dumfries. 3, W. Martin. *c.* W. Carson, Glenluce.

GAME BANTAMS.—*Black and other Reds*.—Cup, A. Withers. 1, Miss M. Moore, Glenluce. 2, W. Martin. 3 and *Ac.* W. Martin, W. M'Clure, Lochan Mills; J. Carroll, Lochmaben; D. M'Caughie, Pollockshaw.

BANTAMS.—*Any other variety*.—1, A. Hutchinson. 2 and 3, W. Martin. *etc.* W. Murray, Hexham. *Ac.* W. Martin (3). D. M'Lealand, W. Martin, W. Geddes, Dalbeattie; A. Firth, Whitecroft, Belfast, W. Murray.

HAMBURGHS.—*Golden-spangled*.—1, W. Martin. 2, W. M'Clure. 3, S. Bone, Lochans. *c.* R. Reed. *Silver-spangled*.—1, 2, and *Ac.* W. Martin. 2 and *Ac.* P. M'Lean. *c.* W. Cumming, Kirkcubbin; J. M'Harrie, Culhorn Mains; J. Ross.

HAMBURGHS.—*Golden-pencilled*.—1 and 2, W. Martin. 2, J. Ross. *Ac.* D. Blair, J. Aitken. *c.* G. M'Dowall, J. Dorans, Stranraer; J. Sinclair. *Silver-pencilled*.—1 and *etc.* W. Martin. 2 and *c.* J. M'Clean, Auchinell. 3, W. Reddihough, Kilbrack, Colne. *Ac.* W. Martin. 3, Spens, Low Ardwell.

HAMBURGHS.—*Black*.—1, J. Ross. 2 and 3, W. Martin. *Ac.* J. Ross, J. Craig. *c.* W. Peebles, J. Graham, sen., Gartland.

HOUDANS.—1, W. Martin. 2, Mrs. M. Carter, Port Carlisle. 3, A. Withers. *Ac.* P. Allison, Holmrook. *c.* J. Robinson, Cleudrie; Miss Robertson.

ANY OTHER VARIETY.—1, W. Martin. 2, A. Yendall, Galston. 3, A. Hamilton, Carluke. *Ac.* A. Withers, Miss E. A. Knott, W. Hartley, Earby.

DUCKS.—*Aylesbury*.—1, F. Robinson, Belfast. 2, R. V. A. Adair. 3 and *Ac.* W. Martin. *Rouen*.—1, *etc.* and *Ac.* W. Martin. 2, F. Robertson. 3, G. M'Dowall.

ANY OTHER VARIETY.—1 and 2, W. Martin. 3, A. Hutchinson. *Ac.* W. Martin, G. W. Congreve.

SELLING CLASS.—2, G. M'Dowall, A. Hutchinson. *etc.* A. M'Harrie. *Ac.* W. Martin (2). G. W. Congreve, P. M'Lean, A. Hutchinson, J. Fisher, Stranraer. *c.* W. Martin.

TURKEYS.—1, W. Martin. 2, J. Spens. *Geese*.—1, J. Spens. 2 and 3, W. Martin.

PIGEONS.

POUTERS.—1, J. & P. Thorburn, Stranraer. 2, 3, and *Ac.* A. Hutchinson. *Letter Carriers*.—1, 2, 3, and *Ac.* A. Hutchinson. 2, R. Bisset. 3, A. M'Dowall.

TUMBLERS.—1, 2, 3, and *Ac.* A. Hutchinson. *c.* J. Rea, Newton-Stewart; W. Martin.

FANTAILS.—1 and 2, J. Waters, Belfast. 3, A. Hutchinson. *c.* Miss E. A. Knott, A. Hutchinson.

JACOBS.—1, 2, *Ac.* and *c.* A. Hutchinson. 3, J. Gilmour, jun., Galston. *Nuns*.—1 and 2, A. Hutchinson. 3, D. M'Arthur, Newton-Stewart.

BARBS.—1, 2, and 3, A. Hutchinson. *c.* T. Maxwell, Maxwelltown, Dumfries. **TURKEYS**.—1, 2, 3, and *c.* A. Hutchinson.

ANTWERPS.—1, 2, and 3, A. Hutchinson. **BALDS OR BEARDS**.—1 and 2, A. Hutchinson. 3, W. Martin. *Ac.* W. Martin, J. Gilmour, jun. *c.* W. Martin (3). J. Ralston, jun., Stranraer.

MAGPIES.—1 and 2, A. Hutchinson. 3, J. Gilmour, jun. *Ac.* J. & W. Towerson, Egmont.

COCHINS.—1, W. Martin. 2 and 3, A. Hutchinson. **ANY OTHER VARIETY**.—1, 2, 3, and *c.* A. Hutchinson. 3, W. Martin.

SELLING CLASS.—1, 2, 3, and *Ac.* A. Hutchinson.

CAGE BIRDS.

CLEAN YELLOW.—*Cock*.—1, P. Wason, Girvan. 2 and 3, A. Hutchinson. *Hen*.—1 and 2, W. Martin. 3, J. M'Creddie, Stranraer.

CLEAN BUFF.—*Cock*.—1 and 2, W. Martin. *Hen*.—1, 2, and 3, A. Hutchinson.

YELLOW PIERRE.—*Cock*.—1, A. Hutchinson. 2, R. Bisset. 3, A. M'Dowall. *Hen*.—1, J. M'Creddie. 2 and 3, W. Martin.

BUFF PIERRE.—*Cock*.—1, W. Martin. 2 and 3, J. M'Creddie. *Hen*.—1, A. Hutchinson. 2, W. Martin. 3, J. M'Creddie.

GOLDFINCH MULE.—1, 2, and 3, A. Hutchinson. **GOLDFINCH**.—1, A. M'Lealand, Stranraer; W. Martin. 2, J. Mackie, Ernespie.

SELLING CLASS.—1, A. Hutchinson. 2, W. Martin. **PARROT OR OTHER FOREIGN BIRD**.—1 and 2, W. Martin. 3, J. Calderwood, Droughdool.

JUDGES.—*Poultry and Pigeons*: Mr. E. Hutton, Pudsey, Leeds. *Cage Birds*: Mr. T. Scott, Carluke.

FORFAR SHOW OF POULTRY, &c.

This large Show was held in the Reid Hall, Forfar, on December 31st and January 1st, and in point both of quality and numbers far exceeded any of the Association's previous exhibitions.

As usual *Game* were the principal feature of the Show, there being no less than 105 entries of them alone. There were twenty-nine Black Red cocks exhibited, and many a good bird had to put up with a commendation. First was a very stylish cockerel, though rather on the small scale; second a good bird; while third was about best in the class, but had met with an accident and had the most of his tail knocked out. Black Red hens formed one of the best classes in the Show. First, a grand one, well deserved her place. Second we did not so much like, had not such a nice head as a number of others; but of course it might be that the others did not handle so well. Brown Red cocks were headed by about the best *Game* cock in the Show; splendid colour and very hard, and looked a *Game* bird all over. Second was a very stylish bird, and these two were very easy winners. Brown Red hens a fair class, but not up to the Black Reds. Cocks of any other colour were well represented. First was a fine Pile with a good Duckwing second, and were well placed. In hens of any other colour an excellent Duckwing won. *Game Bantams* had two classes for cocks—viz., Black Red and Any other colour. In the former a nice Black Red won. Second also fine; but we did not care much for the third, and would have put 107, highly commended (Donald) or 112, highly commended (Walker) in that position. In the next class Mr. Brownlie easily won with one of his grand Piles, beating the Black Red for the cup. Second also a good Pile, while a Brown Red was third. Hens of any colour, we did not like the judging at all. First was a Brown Red, good for its colour, but a poor thing beside Mr. Brownlie's grand Pile. Second was right, but 137 (Shield), highly commended, should have been third. In Any other variety Mr. Ashton's well-known Blacks won. *Hamburghs* were very numerous and good, especially Pencilled hens; while *Dorkings* were fairly up to the usual run at this Show, Mr. Gellatly's and Mr. Armitstead's well-known birds coming to the front. *Brahma* cocks were fairly well represented, while hens of the same were very good, first going to a good-coloured, finely pencilled bird. All the prizes in *Cochin* cocks went to Partridge, and in hens to Buffs. *Spanish* were an exceeding fine lot, the cup-winner in the hens being of grand quality. In the Variety class (cocks) first and second went to Golden Polands, third Black *Hamburgh*; and in hens to Poland.

Pigeons were a great advance on former years owing to increased prize money and extended classification. Pouter cocks

had twelve entries and were well judged; first going to a fine Black, second Blue, third Mealy. Hens had fewer entries, but the quality good; first a showy Yellow, second a fine Blue, third Red, a good bird. Carriers contained only two birds of note, first winning easily. Barbs were numerous. First went to a Yellow hen, the best in the fancy; second a nice cock of same colour; third was far behind the same owner's commended Red hen. Fantails were—after first and second, which were good and well placed—poor. Tumblers, all the prize birds Almonds, and first far before anything else. Jacobins were both numerous and good, but we liked second Black much before second Red. The Variety class contained many good birds; first a magnificent foreign Owl, second an English Owl, third a Red Magpie. Common Tumblers, first Almond, second ditto; third, Red, should have been second, which was only a Splash.

GAME.—Black Red.—Cock—1, J. Sadler. 2, Mrs. W. Ferguson. 3, J. Nicoll. *he*, G. Davis, G. Lamond, J. Mollison, A. Starrock, S. Blach, W. Stewart, J. A. Mather, C. Jamieson, D. Harley, c. Capt. Mackenzie. *Hen*—1, D. Harley, 2, J. Ogilvie. 3, Boath & Tosh. *he*, J. Mollison, J. Clark, S. Blach, J. Millar, Cowie and Welsh, W. Stewart, Boath & Tosh, W. Robertson, J. A. Mather, Dr. Adams, C. Jamieson, C. Jarvis. *c*, D. Forbes, J. Morrison, J. McKinnon.

GAME.—Brown Red.—Cock—1, D. Harley. 2, J. Salmond. 3, T. Guild. *he*, Mrs. W. Ferguson. *c*, J. Nicoll. *Hen*—1, W. Nicoll. 2, D. Harley. 3, G. B. Laird. *he*, T. Gibb, W. Nicoll, J. M'Beath. *c*, Mrs. W. Ferguson.

GAME.—Any other colour.—Cock—1, D. Harley. 2, W. Baillie. 3, W. Gibb. *he*, A. Waterston, W. Robertson, H. Abernethy, J. A. Mather. *c*, J. Millar, Boath & Tosh, Cowie & Welsh. *Hen*—1, D. Harley. 2, Boath & Tosh. 3, W. Robertson. *he*, J. Reid, T. Gibb, J. A. Mather, Cowie & Welsh, W. Gibb. *c*, J. Clark, J. Easton.

GAME BANTAMS.—Black Red.—Cock—1, J. Wilkinson. 2, R. Brownlie. 3, W. McGregor. *he*, W. Reunie, J. D. Donald, A. Walker. *c*, W. Milne, J. Watt, J. Wishart.

GAME BANTAMS.—Any other colour.—Cock—1, J. Strachan. 2, J. Anderson. 3, D. Piggett. *Hen*—1, J. Anderson. 2, J. Wilkinson. 3, W. Horne. *he*, J. Fawcett, J. J. Shield.

BANTAMS.—Any other variety.—1, R. H. Ashton. 2, D. Duncan. 3, J. Taylor. *he*, P. Dunlop, J. A. Dempster. *c*, J. D. Donald, J. Dallas.

HAMBURGERS.—Spangled.—Cock—1, H. Stanworth. 2, J. Mathew. 3, Mrs. W. Ferguson. *he*, Mrs. W. Ferguson, J. M. Campbell, T. Gilroy. *c*, A. Beith, T. Thompson, J. Grant, G. Beattie. *Hen*—1, A. Beith. 2, Mrs. W. Ferguson. 3, J. M. Campbell. *he*, J. Taylor, J. M. Campbell, G. Beattie, H. Stanworth, W. R. Park. *c*, W. Brough, T. Gilroy. *c*, Bremner.

HAMBURGERS.—Pencilled.—Cock—1, J. Lochhead. 2, P. Campbell. 3, A. Pratt. *he*, P. Joyce, P. Campbell, W. R. Park. *c*, Mrs. Leith, W. Milne. *Hen*—1, A. Pratt. 2, Mrs. C. B. Taylor. 3, J. Lochhead. *he*, J. Ness, C. Wood, W. Milne, W. Hadden. *c*, G. Findlay.

DORKINGS.—Dark coloured.—Cock—1, J. M'Kenzie. 2 and 3, D. Gellatly. *he*, R. Topliss, D. Gellatly, Mrs. G. Armitstead, A. Henry. *Hen*—1 and 3, D. Gellatly. 2, J. M'Kenzie. *he*, Mrs. G. Armitstead, Mrs. W. Carnegie, Mrs. Morrison.

DORKINGS.—Any other colour.—Cock—1, Mrs. G. Armitstead. 2, D. Gracie. 3, Mrs. J. Laird, jun. *Hen*—1, G. Scott. 2 and 3, Mrs. G. Armitstead. *he*, Mrs. J. Laird, jun. *c*, D. Gracie, Mrs. J. Laird, jun.

BAHAMA POULTRY.—Cock—1, W. Mitchell. 2, A. Burnett. 3, D. Annan. *he*, W. G. Duncan, H. White. *c*, J. Anderson. *Hen*—1, A. Burnett. 2, W. G. Duncan. 3, W. Mitchell. *he*, J. Sandeman, J. Young, K. M'Nab, A. Burnett, J. Anderson, J. A. Dempster.

COCHINS.—Chinas.—Cock—1, W. Smith. 2, A. Bowie. 3, Mrs. G. Armitstead. *he*, J. Dargie, A. Bowie, W. Smith. *c*, Mrs. G. Armitstead, Mrs. C. B. Taylor, J. Bunnie. *Hen*—Cup and 1, A. Burnett. 2, Mrs. Hendrie. 3, W. Smith. *he*, J. Dargie, Mrs. G. Armitstead, Mrs. J. Davidson, Mrs. A. G. Duncan, Mrs. W. Carnegie.

SPANISH.—Cock—1, A. Robertson. 2 and 3, Mrs. Gracie. *he*, J. Gorrie. *c*, Mrs. Gracie. *Hen*—Cup and 1, J. Norval. 2, J. Gorrie. 3, Mrs. Gracie. *he*, J. Crawford, G. Stewart, Mrs. Gracie, G. Stewart, D. Kidd, J. Park.

SPANISH.—Any other variety.—Cock—1, J. Mathew. 2, J. Taylor. 3, G. Gaitness. *he*, J. B. Brown, Mrs. J. E. Spence, J. A. Laird. *Hen*—1, J. Taylor. 2, T. Gilroy. 3, A. Bowie. *he*, J. Mathew, J. B. Brown, Mrs. J. E. Spence, W. Linton, J. & A. Laird.

SELLING CLASS.—Cock—1, J. Mackintosh (Game). 2, D. Morrison. 3, P. Carr (Dark Dorking). *he*, D. Morrison, G. Grant (Game), J. Clark (Game), J. Mackintosh (Game), A. Cobb (Game), A. Taylor (Spanish), M. A. Miller (Game), R. Robertson (Game), J. Forbes (Game), J. Taylor (Hamburgh), Boath & Tosh, G. Davis, R. Craig, W. Lindsay (Game), W. Hadden, C. Massie. *c*, A. Smith, J. Reid (Game), G. Davis (Game), J. Clark (Game), W. Nicoll (Game), M. A. Miller (Game). *Hen*—1, J. Findlay. 2, D. Morrison. 3, J. Clark (Game). *he*, G. Davis, J. Crawford, D. Shepherd, jun., C. Wood. *c*, W. Jarvis (Game), Boath & Tosh, D. Milne.

PIGEONS.

POUTERS.—Cock—1 and 2, R. W. Bryce. 3, W. Muirhead. *he*, A. Robb, J. Cowe. *c*, A. Robb. *Hen*—1, special, and *c*, A. Robb. 2 and 3, R. W. Bryce.

CARRIERS.—Cock or Hen—1 and special, A. Smith. 2, R. W. Bryce. 3, I. M. Abel.

BARBS.—Cock or Hen—1 and 3, R. W. Bryce. 2, J. E. Spence. *c*, R. W. Bryce, D. Kennedy.

FANTAILS.—Cock or Hen—1, A. Smith. 2, J. E. Spence. 3, H. Coalston, jun. *c*, Mrs. A. G. Duncan.

SHORT-FACED TUMBLERS.—Cock or Hen—1 and special, J. E. Spence. 2 and *he*, D. Kennedy. *c*, R. W. Bryce.

COMMON TUMBLERS.—Cock or Hen—1, J. Cowe. 2, A. Moncreiff. 3, J. J. Shield. *he*, H. Coalston, jun., D. Paton, A. Liveston. *c*, C. Hunter, W. Mackintosh.

JACOBS.—Cock or Hen—1, 2, and *he*, R. W. Bryce. 3, W. & R. Davidson. *c*, J. E. Spence.

ANY OTHER VARIETY.—Cock or Hen—1 and special, R. W. Bryce. 2, W. & R. Davidson. 3, J. Rodgers. *he*, J. E. Spence, J. Cowe. *c*, C. P. Jamieson, A. L. P. Jamieson, J. Cowe, D. Copland.

CAGE BIRDS.

SCOTTISH FANCY.—Yellow.—Cock—1 and medal, J. Boath. 2, W. Wood. 3, W. Farquharson. *he*, J. Mullion. *Hen*—1, G. Stewart. 2, J. Mullion. 3, W. Wood. 4, D. W. Wood.

SCOTTISH FANCY.—Buff.—Cock—1, J. Shanks. 2, J. Mann. 3, W. Masterston. 4, J. Christison. *Hen*—1, W. Clyne. 2, R. Stewart. 3, W. Wood. 4, J. Adam.

PIEBALD.—Yellow.—Cock—1, A. Pearson. 2, G. Crow. 3, C. Ormond. 4, G. Stewart. *Hen*—1, A. Ree. 2, J. Black. 3, A. Lowson. 4, C. Ormond.

PIEBALD.—Buff.—Cock—1 and medal, W. Wood. 2, J. Black. 3, W. Ferguson. 4, J. Wilkie. *Hen*—1, D. Murray. 2, J. Watson. 3, W. Ferguson. 4, J. Adam.

GREEN.—Cock or Hen—1, J. Adam. 2, J. Wilkie. 3, D. Kidd. 4, J. Black.

FOUL.—Cock or Hen—1, J. Wilkie. 2, W. Hutchinson. 3, A. Pearson. 4, J. Kidd.

SELLING CLASS.—Cock—1, J. Smart. 2 and 3, A. Brown. 4, D. Watson. *Hen*—1, A. Ree. 2 and 4, W. Ferguson. 3, D. Fraser.

Mr. John Martin judged the poultry, and Mr. Hendry the Pigeons.

MILLOM (CUMBERLAND) POULTRY SHOW, &c.

This Show was held on the 1st inst. in the Public Hall on Holborn Hill, the birds being judged on the day previous. The day was very wet and dull, and it was with the greatest difficulty some of the classes were judged. Game, for which this neighbourhood is justly famed, were first on the list, and among these were some capital birds, especially the Brown Reds, which we must confess we seldom see excelled. Out of eighteen single cocks twelve were deemed well worthy of notice, and yet the cup for the Game section was carried off by a pair of Brown Red pullets in the next class. In pairs of Game there were some good birds also, and throughout the classes the legs and feet were unusually good. In *Brahmas* a grand pair won the cup for the section; the second though good were nothing near the first for size or excellence. In *Cochins* Buffs were first and Partridge second, the latter containing an extraordinary hen, but the cock was red on throat and fluff. *Cochins*, White were moderate, and *Dorkings* only few in numbers, but the winners good. *Spanish* not good. Red Game Bantams were a grand lot, the first and cup going to a pen of that colour it would be difficult to excel, and the Duckwings in the next class were scarcely less perfect. *Hamburgs* we were surprised to find so good here, although these were shown in one class only. In the Variety class Houdans were first, Gold Polish second, and Crèves third. Rouen Ducks were good, but the Aylesburys poor. There were two excellent Selling classes, the entries numerous, and the birds good. There were but three classes of Pigeons, and beyond the winners nothing of note.

GAME.—Cock—1, R. B. Hudson, Dalton-in-Furness. 2, Bouch & Armstrong, Aspatia. 3, A. Dixon, Sawry. *he*, E. Swainson. *he*, J. W. Brockbank, H. Riley, Irving & Charters, W. Higgin. *c*, Riley & Cooper, J. Mackereith, H. Boulton. *Pullets*—Cup and 1, J. W. Brockbank, Kirkcaldy. 2, W. Boulton, Dalton-in-Furness. *he*, J. W. Brockbank, H. Riley, Irving & Charters, Riley & Cooper, J. Mackereith, L. Casson.

GAME.—Black-breasted and other Reds—1 and 2, R. B. Hudson. 3, E. Swainson, Nibthwaite. *he*, Irving & Charters, W. Higgin. *c*, H. Riley.

GAME.—Any other variety—1, J. Mackereith, Cumberland. 2, H. A. Clarke. 3, J. W. Brockbank. *he*, J. Mackereith, W. Barnes. *c*, J. W. Brockbank, L. Casson.

HAMBURGERS.—Cup and 1, J. & T. Weeks, Bootle. 2, J. W. Brockbank. 3, R. Hartley, Borwick Rills. *he*, J. W. Brockbank, J. White. *c*, W. Bradley, E. Hartley.

COCHINS.—Buff and Partridge—1 and 3, J. O. Rigg, Ulverston. 2, R. Hartley. *c*, E. Skelton, T. Armstrong, H. A. Clarke.

COCHINS.—Any other variety—1 and 3, J. & T. Weeks. 2, R. Hartley. *c*, W. Postlethwaite.

DORKINGS.—Cup and 1, R. Moore, Hensingham. 2, J. Wilson, Cumberland. 3, J. W. Brockbank. *c*, W. Cranke.

SPANISH—1, Bouch & Armstrong. 2, J. W. Brockbank.

GAME BANTAMS.—Black-breasted and other Reds—Cup, 1, and 2, H. J. Nicholson, Milom. 3, W. Grice, Bootle, Carnforth. *c*, R. J. Robinson, H. J. Nicholson.

GAME BANTAMS.—Any other variety—1, J. W. Brockbank. 2, R. Irving. 3, H. J. Nicholson. *he*, J. W. Brockbank, W. Redhead. *c*, H. A. Clarke.

HAMBURGERS—Cup, 1, and 2, J. Jackson, Cumberland. 3, H. A. Clarke. *he*, I. Gaitkell. *c*, Miss H. Walker, J. Musgrave.

ANY OTHER DISTINCT VARIETY—1, J. Martindale (Houdans), 2, H. A. Clarke, Cleaton (Golden Poland). 3 and *c*, R. J. Robinson (Crève Coeurs). *he*, R. J. Robinson (Houdans), I. Gaitkell (Silver-crested Poland).

DUCKS.—Rouen—1 and 2, J. W. Brockbank. 3, J. B. & R. Moore. *he*, H. Watling. *White Aylesbury*—1 and 2, J. W. Brockbank. 3, H. J. Nicholson.

SPECIAL CLASS.—Cock—1, A. Dixon. 2, J. W. Brockbank. 3, J. W. Brockbank, W. Redhead (Dark Brahma), J. Wilson (Dorking). *he*, J. Dobinson (Cinnamon Cochins), M. Clarke (Buff Cochins), J. Mackereith (Brown-Red Game), W. Higgin (Game), W. Brockbank (Poland). *c*, P. & W. Sumpton (Black-Red Game), J. W. Brockbank, H. J. Nicholson (Game Bantam), J. & T. Weeks (White Cochins), W. Cranke (Cochins), L. Casson (Game), W. Grice (Game).

ANY OTHER VARIETY—1, P. & W. Sumpton (Brown-Red Game). 2, J. W. Brockbank. 3, T. Armstrong (Black-Red Game). *he*, J. W. Brockbank, W. Redhead (File), W. Grice (Game). *c*, M. J. Clarke (Buff Cochins), R. Hartley (Brahmas).

SPECIAL CLASS.—Chickens—1, J. Dodgson (Black-Red Game). 2, J. W. Brockbank (Brahmas). 3, H. I. Nicholson (Game Bantams). *he*, J. Postlethwaite. *he*, J. W. Brockbank (Game). *c*, J. W. Brockbank, J. Mackereith (Brown-Red Game).

PIGEONS.

CARRIERS—1, J. & W. Towerson. 2, J. Cook. *c*, D. Lowrey.

JACOBS—1, J. & W. Towerson. 2, Bouch & Armstrong.

ANY OTHER VARIETY—1, J. Boulton. 2, G. Wilson. 3, J. Cook. *he*, J. Boulton. *he*, J. Cook, J. & W. Towerson. *c*, Mrs. Hodgson.

CAGE BIRDS.

BELGIAN.—Yellow.—Cock or Hen—1 and *he*, J. Moffat. 2, J. Salmon. *he*, J. Moffat. *he*, J. Moffat. 2, J. Salmon.

PIEBALD.—Cock or Hen—1, J. Salmon. 2, W. Armstrong.

JUDGE—Mr. E. Hutton, Pudsey, near Leeds.

FIFE AND KINROSS SHOW OF POULTRY, &c.

This was held in the Corn Exchange, Kirkcaldy, on the 3rd and 4th inst.

GAME.—Black Red.—Cock—1, J. & W. Beveridge, Pathheads. 2, C. Jamieson, Forfar. 3, J. Wishart, Kirkcaldy. *he*, J. & W. Beveridge, J. A. Mather, J. H. Herriot, C. Jamieson, G. Thomson. *he*, J. Mason. *Hen*—1, J. Patullo, Broughty Ferry. 2, C. Jamieson. 3, J. Wishart. *he*, J. Miller, C. Jamieson. *he*, G. W. Smith, Boath & Tosh. *c*, J. Darning.

GAME.—Brown Red.—Cock—1, J. Salmond, Monifieth. 2, R. Stewart, Blairadam. 3, W. Webster. *he*, H. W. Hutchinson. *Hen*—1, G. & A. Blair. 2, R. Stewart. 3, W. Webster. *he*, W. Webster, H. W. Hutchinson.

GAME.—Any other colour.—Cock—1, A. Watson. 2, G. Thomson. 3, J. Masch. *he*, S. Young. *c*, A. Watson. *c*, J. Beith. *Hen*—1, J. Crombie, jun. 2, D. Simpson. 3, E. Hall. *he*, D. Deas, J. A. Mather, C. Jamieson, J. Wishart.

DORKINGS.—Silver.—Cock—1 and 2, W. Hughson. 3, D. Annan. *Hen*—1, W. Hughson. 2, D. Annan. 3, W. Christie, jun. *c*, T. Raine.

DORKINGS.—Dark.—Cock—1 and 2, T. Raine. 3, A. Ramsay. *he*, G. S. Robb. *Hen*—1 and 2, T. Raine. 3, G. S. Robb. *c*, Lieut.-Col. C. Rice.

COCHIN-CHINAS.—Cock—1, A. Bowie. 2, J. Dargie. 3, Mrs. A. G. Duncan.

the, J. Wyse. ac, F. C. Parker, J. Dargie, J. Pantom. c, J. Bunce. Hen.-1, Mrs. A. G. Duncan. 2, J. Fowles. 3, Mrs. Oswald. ac, A. Dryburgh, A. Bowie. c, Earl of Roslyn.

BRAHMA POUFERS.—*Cock*—1 and 2, T. Raines. 3, D. Annan. *the, W. G. Duncan. W. R. Park. ac, Miss M. Morrison. T. Pye. C. H. Handasyde. c, J. Young. Hen.-1, W. G. Duncan. 2, Miss M. Morrison. 3, H. A. Gibson. c, T. Pye. J. Young. ac, Miss M. Morrison. J. Young. C. H. Handasyde, J. A. Dempster. T. Raines. c, T. Raines, J. Crawford.*

SPANISH.—*Cock*—1, R. Somerville. 2, T. Nicol. 3, W. Hughson. *ac, W. R. Park. W. Hughson. Hen.-1 and 2, R. Somerville. 3, J. Eldpath. ac, W. R. Hughson (3).*

HAMBURGERS.—*Pencils.*—*Cock*—1, W. Linton. 2, A. Pratt. 3, P. Campbell. *ac, J. Ness. P. Campbell. D. Cheyne. A. Pratt. c, J. Kelly. Hen.-1, W. R. Park. 2, J. Lockhart. 3, A. Pratt. ac, W. Hughson. c, D. Cheyne.*

HAMBURGERS.—*Spangled.*—*Cock*—1, W. R. Park. 2, R. Parsons. 3, H. Stanworth. *ac, Miss J. Thomson. R. Thomson. W. S. Blyth. Mrs. W. Ferguson. Hen.-1, J. M. Campbell. 2, A. Beith. 3, W. R. Park. ac, H. Stanworth, C. Campbell.*

DUCKS.—1, J. A. Mather. 2, A. Bowie. 3, G. Thomson. *ANY OTHER BREED, EXCEPT BANTAM.*—*R. Parsons. 2, W. R. Park. 3, A. Bowie. ac, Mrs. Spence, Earl of Roslyn, M. Tod.*

GAME BANTAMS.—*Reds.*—*Cock*—1 and Cup, A. Walker. 2, J. Wilkinson. 3, R. Brownlie. *the, Master D. Laing, A. Hannan. ac, G. Bell, G. Henderson, jun., W. Hughson. A. Bowie. c, H. Mackie, A. Robertson, J. R. Kilgour. Hen.-1, J. Brownlie. 2, J. Wilkinson. 3, Master D. Laing. ac, H. Mackie, J. Beveridge, Master D. Laing (2), c, G. Bell.*

GAME BANTAMS.—*Any other colour.*—1, R. Brownlie. 2 and Cup, T. Harrower. *jun. 3, Miss R. C. Frew. ac, J. Archibald.*

BANTAMS.—*Sebright.*—1, J. Milne, jun. 2 and 3, M. Leno. *ac, J. A. Dempster. Any other variety.*—1, J. Archibald. 2, A. Frew. 3, D. Cheyne. *ac, J. Archibald, R. H. Ashton. c, A. G. Lindsay.*

SELLING CLASS.—*Cock*—1, W. R. Park. 2, W. Linton. 3, J. Balfour. *ac, J. Archibald, R. H. Hoggie, Mrs. Hutchison, J. Redpath, W. Wallace. c, Miss G. Morrison, W. Drummond, A. Ramsay, J. Bellford, P. Henderson. Hen.-1, J. Redpath. 2, Lieut.-Col. C. Rice. 3, T. Williamson. ac, Miss G. Morrison, Earl of Roslyn, Lieut.-Col. C. Rice (2), c, C. H. Handasyde.*

PIGEONS.

POUTERS.—*White.*—*Cock*—1 and c, J. McGill. 2, 3, and ac, J. Grant. *the, J. E. Spence. Hen.-1 and c, J. Grant. 2, J. McGill.*

POUTERS.—*Any other colour.*—*Cock*—1 and c, R. W. Bryce. 2, Wright and Stoddart. *ac, R. Muirhead. Hen.-1, Wright & Stoddart. 2, W. Muirhead. 3 and ac, R. W. Bryce.*

CARRIERS.—*Cock*—1, A. Smith. 2 and 3, J. Lamont, jun. *the, ac, J. Watson. Hen.-1 and 2, J. Lamont, jun. 3, J. Watson.*

FANTAILS.—*Cock or Hen.*—1, A. Smith. 2, J. E. Spence. 3, A. Crosbie. *c, A. Smith, J. E. Spence.*

TUMBLERS.—*Cock or Hen.*—1 and 3, R. W. Bryce. 2, J. E. Spence. *ac, W. Robert. Wright & Stoddart.*

NUES.—*Cock or Hen.*—1 and 3, A. Duthie. 2, J. Lamont, jun. *ac, A. Duthie, D. Duff.*

JACOBI.—*Cock or Hen.*—1 and 3, R. W. Bryce. 2 and *the, R. B. Hoggie. ac, J. E. Spence, R. Raines.*

TURKISH OR OWLS.—*Cock or Hen.*—1, R. W. Bryce. 2, J. Lamont, jun. 3, A. Crosbie. *ac, R. W. Bryce, J. Lamont, jun.*

ANY OTHER VARIETY.—*Cock or Hen.*—1, 2, and *the, R. W. Bryce, J. E. Spence. ac, J. Cairns.*

CAGE BIRDS.

SCOTCH FANCY CANARIES.—*Yellow.*—*Cock*—1, R. Forsyth. 2, T. Scott. 3, J. McRae. *ac, Mrs. Kilgour, Card, R. Jackson. Hen.-1 and 4, R. Hunter. 2, H. Hoggan. 3, D. Reid. Card, T. Scott.*

SCOTCH FANCY.—*Buff.*—*Cock*—1 and special, R. Hunter. 2, G. Greig. 3, T. Scott. *ac, J. Forbes, Card, R. Forsyth. Hen.-1 and special, T. Cornwall. 2, J. Kerr. 3 and c, R. Hunter. Card, R. Jackson.*

FLOCKED CANARIES.—*Yellow.*—*Cock*—1 and special, R. Hunter. 2, D. Allan. 3, T. Scott. *ac, A. Pearson. Card, W. Bonthron. Hen.-1, R. Chalmers. 2, W. Bonthron. 3, C. Cairns. 4, R. Aird. Card, T. Currins.*

FLOCKED.—*Buff.*—*Cock*—1, G. Greig. 2, T. Cornwall. 3, W. Lawson. *ac, T. Scott. Card, D. Allan. Hen.-1 and special, W. Rutherford. 2, Mrs. Kilgour. 3, J. Beveridge. 4, R. D. Wardlaw. Card, R. Hunter.*

GREEN BIRD.—*Cock or Hen.*—1, A. Trotter. 2, J. Pender. 3, C. Cairns. *ac, W. Hogg. Card, R. Chalmers.*

FOUL-FEATHERED BIRD.—*Cock or Hen.*—1, T. Scott. 2, J. Pender. 3, H. Hoggan. *ac, R. Stenhouse. Card, J. Pratt.*

GOLDEN FINCH.—*Buff.*—*Cock*—1, 4, and Card, J. Robertson. 2, D. Young. 3, W. Kirk. *Yellow.*—*Cock*—1 and 4, D. Young. 3 and 4, J. Robertson. Card, C. Cairns.

JUDGES.—*Poultry:* Mr. R. Teebay, Preston. *Pigeons:* Mr. A. Frame, Larkhall. *Canaries:* Mr. N. McLean, Glasgow; Mr. J. Smith, Coatbridge.

HEXHAM SHOW OF POULTRY, &c.

This was held at Hexham, in the Town Hall and Corn Exchange, on New Year's Day. On account of some losses the prize list had been to some extent curtailed, many classes of poultry and Pigeons with Rabbits and Cats being dispensed with, but withal the entries were good. The Show was well managed, the pens were from Stoke-on-Trent, and the birds well provided for as regards food and water.

Brahmas were pretty good, the first large and well marked, the second hen even better than the first, but the cock not near so good. **Cochins**, the winners superb. First and second Buffs, third Partridge. The first named also winning the cup for the section. **Dorkings** were poor. **Game (Red)**, were a heavy class, the first and third Brown, and second Black-breasted Red; but the cup for Game was won by one of the best Duckwing cockerels ever seen, both as regards colour and shape. **Bantams** as usual were a grand section, the cup being awarded to a pen of Black Reds of fine quality and in the pink of condition, many other pens proving almost equal. In the next class Piles were first, and Duckwings second and third. **Game Bantam** cocks were very good, the first and third going to Black, and second to Brown-breasted Red. In the following class Black and Silver Sebrights won. **Spanish** a small but good lot, and mostly old birds. The cup for this section, however, going to a grand pen. **Hamburgs.**—In Pencils the birds were poor with the exception of the first-prize Golden. In the Variety class the first and cup were won by Golden Polands, the second Black Hamburgs, and third Crève-Cœurs. There was but one class for **Ducks**, the winners being Rouens and Spotted Bills.

A capital class. The Selling class contained some cheap lots, and many pens changed hands. In the local class for the large varieties were some capital birds, especially the Cochins and Spanish, but the best of these were the Bantams, which were almost equal to the open classes in point of merit.

Pigeons made a capital display, the Pouters being placed in some capital pens showed to great advantage and were a show in themselves. Carriers were not equal to the Pouters as classes, but we recognised some good birds among the lot in all the classes, the winners being Blacks and Duns in all cases. In Short-faced Tumblers were some good birds, not alone in head properties, but also in colour and marking, Almonds being to the front. Barbs were a fair lot and mostly young birds. **Dragoons** were a large good class, the first a Blue, and second and third Silvers. All birds of the right stamp. In **Dragoons**, any other colour, the first was a Red, second Yellow, and third a Grizzle, the two first right grand birds in every respect. Short-faced Antwerps were poor as a class, and only the first in Long-faces deserves a notice, but this, a Red Chequer, was particularly good. Turbits had two classes, and these were about the best classes in the Show. English Owls were not good, many being far too straight in beak, but the colour and frill in most cases were very good. Fantails very good and well placed, while in Jacobins also there were some good birds, notably the cup Red, and Messrs. Brydone and Alderson's Yellows. Magpies and Nuns were in one lot and very good, while Long-faced Tumblers were divided. In the second of these Almonds won, but some of these too nearly approached their Short-faced brethren.

Cage Birds were a small but select lot, among which we recognised some of the champions of this season—notably the four-pointed Linnet Mule shown by Mr. Spence, and to which was awarded the cup for the best in the Show.

Brahmas.—1, R. Shield, Swallow. 2, Dr. Holmes, Whitecoats. 3, S. Teasdale, Alston. *ac, C. Venables, J. Benn, T. Webb, Mrs. A. Ellison.*

Cochins.—Cup, 1, and 3, G. H. Proctor, Durham. 2, J. Bell, Linnels. *c, Henderson & Close.*

Dorkings.—1 and 2, J. Wardle, West Wyland. 3, J. Coulson, Shetley Bridge. *Game.*—*Black and Red.*—1, W. Youngusband, Darlington. 2, J. Brough, Carlisle. 3, C. Venables. *ac, T. Young, W. Youngusband, W. Ormerod, Miss Nelson. Any other colour.*—Cup and 1, Miss Nelson, Cockshaw. 2, G. Holmes, Driffield. 3 and c, W. Drydale, Morpeth. *ac, T. Grierson, T. Young, L. A. and H. H. Staveley, G. Rutherford.*

GAME BANTAMS.—*Black or Brown Reds.*—Cup and 1, R. White, Cockshaw. 2, W. Wardle. 3, C. Miller, Southwick. *the, T. Gothard. ac, W. Wardle, T. Dowell, W. Murray. c, R. Wood, J. Wilson.*

ANY OTHER VARIETY.—Cup and 1, J. Bellingham & Gill. 2, T. Dowell. 3, G. Ridley. *c, J. Cook, J. Burnip, R. White, J. A. Davis, G. Coulthard.*

GAME BANTAMS.—*Cock*—1, J. Nelson. 2, R. English. 3, J. Cook, *ac, W. Wardle, T. Gothard, R. Shield, J. Purvis. c, T. Dowell, G. Coulthard.*

BANTAMS.—*Not Game.*—1, R. H. Ashton. 2, T. H. Cartwright. 3, T. P. Carver. *ac, G. Holmes, Miss M. J. Nelson, T. H. Cartwright, C. Judson. c, W. Newbegg, T. H. Cartwright.*

SPANISH.—1 and 2, Willoughby & Parvis. 3, H. Wilkinson. *ac, J. Richardson. c, R. Sewell.*

HAMBURGERS.—*Gold or Silver-spangled.*—Cup and 1, G. & J. Duckworth. 2, G. Alderson. 3, G. Holmes. *ac, T. P. Carver, J. Richardson, E. Nicholson. c, G. Davidson.*

HAMBURGERS.—*Gold or Silver-pencilled.*—1, G. & J. Duckworth. 2, T. Dodds. 3, T. & J. Kidson. *ac, C. Judson. c, T. P. Carver.*

ANY OTHER VARIETY.—Cup and 1, J. P. Froude. 2, C. Judson. 3, W. R. Park. *the, J. T. Proud, T. Webb. ac, T. Fernell, H. A. Clark, Rev. J. G. R. Knight c, W. Newbegg, M. A. Hewitson.*

DUCKS.—1, T. Wakefield. 2, C. Judson. 3, Miss Nelson. *ac, C. Judson, Miss Nelson.*

COCK OR DRAKE.—1, J. Benn. 2, J. Craig. 3, J. N. Laws. *ac, T. Young, T. P. Carver, Miss Nelson, J. Benn, T. Webb, J. N. Laws, J. Burnip, T. Wakefield. c, J. N. Laws, E. J. Tate, M. Lamb, J. Wilson, W. Murray.*

EGGS OR DUCKS.—1, J. N. Laws. 2, G. Cartmel. 3, J. Stephenson. *the, J. Coulson. ac, Miss M. J. Hedley, J. Benn. c, T. Webb.*

LOCAL CLASSES.—*Game Bantams.*—1, Mrs. E. Williamson. 2 and 3, Miss M. J. Wilson. *ac, G. Williamson, W. Murray. Any other variety.*—1, I. Bate, jun. 2, Hedley & Ridley. 3, Willoughby & Parvis. Extra and 3, M. Wilson. *ac, M. Green, jun., Hedley & Ridley, M. Lamb, J. Grey, J. Robson, T. Whitfield.*

PIGEONS.

POUTERS.—*Black, Red, or Yellow.*—*Cock*—1 and 3, Ridley & Dye. 2, R. A. Nicholson. *ac, E. Beckwith, Ridley & Dye. Hen.-1, 2, and 3, Ridley & Dye. ac, E. Beckwith.*

POUTERS.—*Any other colour.*—*Cock*—Cup, 1, 3, and *the, Ridley & Dye. 2, Guthrie & Hope. ac, G. Holmes, E. Beckwith, R. A. Nicholson. Hen.-1, 2, and 3, Ridley & Dye. ac, c, R. Nicholson.*

CARRIERS.—*Cock.*—Cup, 1, and *ac, E. Beckwith. 2, 3, and c, Ridley & Dye. Hen.-1 and 3, Ridley & Dye. 2 and ac, E. Beckwith. Young.*—1 and 3, Ridley & Dye. 2, A. Umpleby. *ac, Ridley & Dye, A. Umpleby. c, A. N. Dodds.*

SHORT-FACED TUMBLERS.—1, 3, and *the, E. Beckwith. 2 and ac, W. R. Pratt. c, Hope & Hope.*

LONG-FACED TUMBLERS.—*Balds or Beards.*—1 and 3, Ridley & Dye. 2, W. Brydone. *the, W. B. Maplebeck, jun., R. H. Unsworth, Ridley & Dye. c, J. W. Harling, E. Walker. Any other variety.*—1, Guthrie & Hope. 2, J. Murray. 3, E. Beckwith. *ac, J. W. Harling, J. Murray, E. Beckwith, E. Walker. c, J. W. Harling, c, Carrell, W. Ellis.*

BARBS.—1 and 3, E. Beckwith. 2, W. Ellis.

DRACOONS.—*Black or Silver.*—Cup and 1, J. G. Dunn. 2, R. Woods. 3, Ward and Rhoads. *the, W. Smith. ac, R. Woods. J. G. Dunn, J. Patterson. Any other colour.*—1 and 3, R. Woods. 2, W. Smith. *ac, J. Patterson, R. Woods, C. Guthrie.*

ANTWERPS.—*Short-faced.*—1, P. Law. 2, G. B. Goodfellow. 3, J. Bastows. *ac, J. Bastows, G. B. Goodfellow. c, J. G. Patterson. Long-faced.*—1, W. Ellis. 2, Powell & Crane. 3, W. K. Pratt. *ac, W. A. Fishburn.*

TURBIS.—*Blue or Silver.*—1, T. Welsh. 2 and 3, T. W. Clementson. *the, T. Johnson. ac, G. Alderson. c, T. W. Clementson, M. Green. Any other colour.*—Cup and 1, T. Gallon. 2, 3, and *ac, T. W. Clementson.*

OWLS.—*English.*—1, T. Williamson. 2, T. W. Clementson. *the, J. Gardner. ac, T. W. Clementson, Ward & Rhoads. c, T. Young, T. W. Clementson.*

FANTAILS.—1, E. Beckwith. 2 and c, J. Walker. 3, A. Smith. *the, ac, J. F. Liveredge.*

JACOBI.—Cup and 1, J. Thompson. 2, W. Brydone. 3, T. P. Carver. *the, T. W. Clementson. ac, J. Gardner, W. Dugdale, S. Lawson. c, J. Gardner, G. Alderson, J. Rypon.*

NUMS OR MAGPIES.—1, P. Wilson. 2, R. A. Nicholson. 3, T. Wilkinson. *who*, M. Ord, Powell & Crane. *Ac*, P. Hinde, G. J. Dewey. *c*, W. Brydson. *ANY OTHER VARIETY.*—1 and 2, E. Beckwith. 3, J. & W. Towerson. *who*, G. Alderson. *Ac*, M. Ord, F. S. Barnard, J. & W. Towerson, E. Beckwith.

SELLING CLASS.—*Pairs.*—1, J. Wardle. 2, R. A. Nicholson. 3, G. Hope. *Ac*, W. Brydson, G. Thompson, F. Dodd, J. Murray. *Single Bird.*—*Cup* and 1, R. Nicholson. 2, G. Guthrie. 3, J. Murray. *who*, W. Brydson, E. Gibson. *Ac* and *c*, J. Wardle, J. & W. Towerson, M. Green.

CAGE BIRDS.

NORWICH.—*Clear Yellow.*—1, W. Smith. 2, W. & C. Burniston. *c*, J. Allison. *Variegated Yellow.*—1, T. Clementson. 2, W. Smith. *who*, J. Baxter. **NORWICH.**—*Clear Buff.*—1, W. Smith. 2, J. Baxter. *who*, W. & C. Burniston. *Variegated Buff.*—1, W. Smith. 2, W. Henderson. **SO. TH. FANCY.**—1, W. Clark. 2, W. Wallace. *who*, W. Clark, W. Wallace. *Ac*, W. Wallace, R. Gilhespy.

CRICKET.—1, J. Baxter. 2, R. Simpson. *who*, R. Gilhespy. **YORKSHIRE.**—1, T. Clementson. 2, W. Renwick. *Ac*, R. Gilhespy. *c*, G. F. Hedley.

ANY OTHER VARIETY OF CANARY.—1, J. Stephens. 2, J. Spence. *who*, R. Simpson. *Ac*, J. Baxter. *Ac*, W. Renwick. *c*, Miss Walker.

MULES.—1 and Medal, J. Spence. 2, J. Stephens. *who*, R. Simpson, J. Spence, J. Stephens. *Ac*, G. F. Henley, W. Hutton. *c*, J. Maddison, W. Dodd.

ANY OTHER VARIETY OF BRITISH BIRD.—1, W. & C. Burniston. 2, J. Baxter. *who*, J. Maddison. *Ac*, J. J. Jameson, E. Robson, E. Robson, Miss Guthrie.

ANY VARIETY OF FOREIGN BIRD.—1, 2, and *who*, W. Davis.

JUDGES.—*Poultry*: Mr. Hutton, Pudsey. *Pigeons*: Mr. Rule, Durham. *Cage Birds*: Mr. Blaketon, Sunderland.

BAILDON ORNITHOLOGICAL AND COLUMBARIAN SOCIETY.

THE annual Exhibition of the above Society was held in the large room of the Church of England Schools, Baildon, on the 7th and 8th inst. In point of entries there was a falling-off in both the Pigeon and Cage-bird classes of nearly 200 compared with last year's show, still the general quality of the birds was good, particularly in the Cage-bird portion. The new Secretary Mr. Hutton, considering he was new in the cause, worked through the business tolerably well. There was but one slight hitch in the Show worth recording, that of a couple of Pigeons having been wrongly penned, which for a time caused a little difficulty both to the respective exhibitors, Judge, and Committee, and we think the easiest way to have overcome the difficulty would have been for the Committee to have allowed an extra prize to have been awarded. We may likewise draw attention to the schedule, which needs some revision for another show. We think Carriers or Pouters should head the list instead of Jacobins. The classes throughout were fairly represented, Antwerps taking the lead with about eighty-three birds in the six classes. There were two classes for English Owls and none for Foreign, and but one class for Tumblers—that of Long-faced.

In the Canary section we noticed an entire absence of the Norwich birds, which had been struck out of the schedule; for what particular reason we know not, unless the pepper question is already beginning to deter some of the fanciers who really cannot keep pace with the enormous expense in moulting them, and even then with but slight chance of winning. We would advise the Committee another year to reinstate the classes, and offer premiums to birds not moulted with pepper. There were a few good Belgians (especially the first and second prizes), and Coppins and Plain-heads; but a great feature in the Exhibition was the Yorkshire-bred birds, some of which were splendidly marked. The classes for British Birds were attractive and exceedingly interesting, and we noticed that the White Black-bird achieved another laurel to the several already won. By-the-by there was a Nightingale in the Show, but it had a feather in its tail—a somewhat uncommon occurrence, and being one feather more than the four Nightingales could muster at the recent Hanley Show. The awards of Mr. Calvert of York was tolerably good all round; but still this was not the best part of the proceedings, for the worthy hostess of the "Malt Shovel" provided for the Judges, Committee, and reporters a dinner fit for a king to partake of.

PIGEONS.

JACOBINS.—*Cock or Hen.*—1 and 2, T. W. Swallow. 2, A. Hawley. *who*, A. Hawley, E. Horner.

POUTERS.—*Cock or Hen.*—1, B. Rawnsley. 2 and *who*, E. Horner. 3, J. Moorhouse.

FANTAILS.—*Cock or Hen.*—1 and 2, J. Walker. 3, J. F. Loversidge. *who*, E. Horner.

ENGLISH OWLS.—*Cock.*—2, Ward & Rhodes. 3, J. Thresh. *who*, E. Horner. *Ac*, Bellwell & Ingham. *Hen.*—1 and 2, J. W. Stansfield. 3, W. Wilkinson.

ANTWERPS.—*Short-faced.*—*Cock.*—1, J. Heya. 2, W. Ellis. 3, J. Lister. *Ac*, W. Illingworth, E. Mounsey, Bellwell & Ingham. *Hen.*—1, W. Illingworth. 2, W. Ellis. 3, A. Brook. *Ac*, W. Ellis, J. Lister. *c*, W. Wilkinson.

ANTWERPS.—*Long-faced.*—*Cock.*—1 and 2, W. Ellis. 3, E. Mounsey. *Hen.*—1, Cockett & Gledhill, W. Ellis. 2, J. Bastow. *Ac*, W. Illingworth, Ward & Rhodes.

ANTWERPS.—*Medium-faced.*—*Cock.*—1, G. Collins. 2, J. Thresh. 3, W. Ellis. *Ac*, W. Ellis, Ward & Rhodes. *c*, J. Heya. *Hen.*—1, A. Brook. 2, W. Ellis. 3, B. Powell. *Ac*, E. Mounsey, J. Lister, Ward & Rhodes.

CARRIERS.—*Cock or Hen.*—1, J. Sagar. 2, E. C. Stretch. 3, E. Mawson. *Ac*, V. Ratcliffe, E. Horner.

DRACOONS.—*Cock or Hen.*—1, Clayton & Birstow. 2, F. W. Jennings. 3, Ward & Rhodes. *Ac*, E. Horner. *c*, V. Ratcliffe, J. Mann, E. Mawson.

TUMBLERS.—*Cock or Hen.*—1 and *Ac*, E. Horner. 2, W. Wilkinson. 3, S. Dewhurst. *who*, J. Moor.

LONG-FACED TUMBLERS.—*Cock or Hen.*—1, A. Hawley. 2, J. Cargill. 3, W. Lund. *Ac*, E. Mawson, Garbutt & Sidgwick.

BARBS.—*Cock or Hen.*—1, E. Mawson. 2, E. Horner. 3, J. Thresh.

ANY OTHER VARIETY.—1, A. Hawley. 2, E. Rawnsley. 3, E. Horner. *Ac*, G. W. Holloway, W. Wilkinson.

SELLING CLASS.—1, E. C. Stretch. 2, W. Ellis. 3, E. Horner. *who*, W. A. Newall, Jagger & Hartley, E. Mawson, A. Hawley, B. Rawnsley. *c*, Tordoff and Wilkinson.

CAGE BIRDS.

BELGIAN.—*Yellow or Buff, Clear or Ticked.*—1 and 2, Cleminson & Ellerton. 3, W. Shackleton. *c*, R. Barrett.

COFFY.—*Yellow, Clear or Grey Crest.*—1, O. Paley. 2, R. Usher. 3, W. Lancaster. *Ac*, J. Baskrick. *Buff, Clear or Grey Crest.*—1, J. & H. Garbutt. 2, R. Simpson. 3, P. Rawnsley. *Ac*, L. Belk. *Plata-headed, Yellow or Buff, Clear or Ticked.*—1, R. Simpson. 2, J. & H. Garbutt. 3 and *Ac*, G. A. Watson.

LIZARDS.—*Golden-spangled.*—1, J. Stevens. 2, Cleminson & Ellerton. *Silver-spangled.*—1, J. Stevens. 2, O. Paley. 3, Miss Wells. *Ac*, Cleminson and Ellerton.

YORKSHIRE.—*Clear Yellow.*—1, W. Lancaster. 2, J. Overend. 3, J. & H. Garbutt. *Ac*, G. A. Watson. *Clear Buff.*—1, W. Lancaster. 2, J. Thackrey. 3, G. Turner. *Ac*, J. Overend.

YORKSHIRE.—*Evenly-marked Yellow.*—1 and 2, J. Thackrey. *Ac*, L. Belk. *Evenly-marked Buff.*—1 and 2, J. Thackrey. 3, L. Belk. *Ac*, P. Rawnsley.

YORKSHIRE.—*Ticked or Unevenly-marked Yellow.*—1, J. Overend. 2, Fawcett and Anderson. 3, J. Thackrey. *Ac*, R. Pearson. *Ticked or Unevenly-marked Buff.*—1, J. Thackrey. 2 and 3, G. Turner. *Ac*, J. & H. Garbutt.

YORKSHIRE.—*Buff or Jonque.*—1, J. W. Howitt. 2, O. Worth. 3, Fawcett and Anderson. *Marked or Variegated.*—1, T. Tanniswood. 2, W. & C. Burniston. 3, P. Rawnsley. *Ac*, L. Belk.

GOLDFINCH MULES.—*Clear or Variegated.*—1, Barr & Young. 2 and 3, J. Stevens. *who* and *Ac*, Stroude & Goode. *Dark.*—1 and 2, W. Lancaster. 3, G. A. Watson.

LINNET AND CANARY MULES.—1 and 2, J. Stevens. 3, R. Simpson. *who*, W. Lancaster.

MULES.—*Any other variety.*—1, J. Stevens. 2, W. Lancaster. 3, Stroude and Goode.

GOLDFINCHES.—1, Cleminson & Ellerton. 2, W. Lancaster. 3, J. Pearson. *who*, T. Foster.

BULFINCHES.—1 and 2, J. Rowland. 3, R. Barrett. *Ac*, C. Worth.

BROWN LINNETS.—1, W. H. Batchelor. 2, R. Pearson. 3, W. Carrick. *who*, R. Pearson.

ANY OTHER VARIETY.—1, J. Hall. 2 and special, R. Humphrey. 3, W. & C. Burniston. 3 and special, J. Hutton. 3, W. Bastow. *who*, J. Whitaker.

SELLING CLASS.—1, J. W. Howitt. 2, J. Ellis. 3, Fawcett & Anderson. *Ac*, W. Bastow.

JUDGES.—*Pigeons*, Mr. J. Thompson, Bingley. *Canaries*, Mr. J. Calvert, York.

REIGATE SHOW OF POULTRY, &c.

THIS Show was held on the 5th and 6th inst. at the Drill Hall, a capital building for the purpose, but rather inconveniently situated.

The management was good and the classes for poultry and Rabbits were well filled. The Pigeon prize list was a liberal one, but it was not so well supported. *Dorkings.*—In coloured cocks the first and second were good birds, rest moderate. *Hens.*—First (Parlett), a grand specimen. Second and third deserved their position. This was a capital class. Any other colour.—First (Blue), rich in colour, of fair size, but rather coarse in comb. Second (Blue), a neat bird, but not so large as the winner. Third a moderate White. *Hens.*—First (Crosswell), a beautiful White. Second a handsome Cuckoo. Third, a Cuckoo, not quite so good in colour. *Cochins, cocks.*—First (Lingwood), a fine bird. Third (Christy), we liked better than the second. He had many good points and was better in colour. *Hens.*—Mr. Bloodworth and Mr. Darby exhibited two good old birds. Mrs. Christy also showed a fine coloured pullet, commended. Any other colour, Capt. Talbot won in both classes with superb Whites. *Brahmas.*—First (Lingwood), a fine old bird, the rest only moderate. *Hens.*—A better class, Rev. J. D. Peake winning with a beautifully pencilled bird. Second was well marked but wanted leg feather. *Lights.*—Good classes. First (Haines), a grand bird. Second (Lingwood), also a fine specimen. *Hens.*—A nice class, Capt. Saville winning with a bird of very pure colour and well marked in the hackle. *Spanish.*—Eleven entries, nearly all good, Mr. A. Hewes winning the cup with birds of fine quality but a little out of condition. *Game* classes were satisfactory. The cup was secured by a fine Brown hen of good style. Any other variety class obtained only three entries. The pen of Piles that was awarded first would have maintained its position in a much larger competition. *Houdan* classes were very good. In the *French* we preferred the second-prize pen to the winners. *Hamburghs* were moderate classes, Mr. Long's birds arrived too late for competition. In the class for *Leghorns* a pretty pen of Whites was first. *Game Bantams, Black Reds.*—First and cup (Anns), a nice coloured pen, but for style and closeness of feather we preferred the second. Any other variety.—First (Marsh), Duckwings, a really handsome pen. *Ducks, Geese, and Turkeys* all obtained good entries, and the selections were well made.

Pigeons.—Pouters only seven entries in the two classes. Carriers were much better supported. In cocks Mr. Cucksey was first with a grand bird, fine in eye and wattle, and shown in good condition. He also exhibited a bird of great promise in the young class. Tumblers were small classes, but a few handsome birds were to be found, the most noticeable being Mr. Fulton's Almond cock, and the Almond and Agate hens of Mr. Jayne. Messrs. Loversidge and Maynard exhibited some beautiful Fantails, and Mr. Fulton a rare pair of Trumpeters. The rest called for no special comment.

Messrs. Leno and Nichols judged the poultry, and Mr. Corker the Pigeons.

[We have a letter from "A SUREBY PARSON" pointing out

defects which require remedy at future shows. This will be in our columns next week.—Eds.]

POOLE POULTRY SHOW.

WITH the new year another Dorsetshire town makes its *début* in the poultry-show world. We are glad of it, for exhibitions are needed in that county, that part of the world not coming off so richly as the midland and northern counties. For the first Show it may be called a great success. We should think many of the pens came on from Bristol, and wonder Reigate with its more numerous and substantial prizes did not catch all the travellers. At Poole we found 221 pens of poultry and 185 pens of Pigeons, and the quality was exceedingly good. Mr. Tegetmeier awarded the prizes, and seemed to give satisfaction. The Committee were courteous, and took every possible pains for the well-being of the Show. We should recommend them, however, next time to announce who their Judge is to be. We know on this occasion ignorance on this point kept one or two from exhibiting. It is now nearly always done, and the results show the well-working of the system.

Brahmas came first; the two colours made up no less than forty-one pens. The Darks were good, and the first-prize pen of Lights really admirable. One or two more pens of this colour were deserving of a prize, but there were none for them. We are convinced third prizes are of the greatest value not only to the Committee and exhibitors, but to a judge, for it is a very difficult business to select a couple of pens out of, perhaps, half a dozen of nearly equal merit. *Cochins* were capital. The winners were a nice pen, and cheap at catalogue price of £3 3s. A good pair of adults were second, fair in colour. In the next class good Whites were first, the cock a very good bird; second went to neat Partridge. This was a wonderfully good class. *Dorkings* of all colours met together, and the result was, of course, that Silver-Greys and Whites were not to be found. A pair of old birds were first, and we think properly so. *Houdans* again were a good class, and on the whole the colour was, perhaps, more even throughout. We are glad to note of late, too, an improvement in the combs of this variety. Mr. Chisman's two pens were only in at 50s. and 30s., and must have speedily found purchasers. In the other *French* class *Crêves* won all the prizes. All the noticed birds were adults. The prize pens were large and good in shape. 85 (Sturt) had a nice cock, and we liked the hen in Mr. Vickery's pen. *Game* had only one class, and consequently only five pens were entered. These were, however, very fair, and the winners would have come out well in larger competition. Pencilled *Hamburgs* were wretched, and only a second prize was awarded. Spangled were better, and made quite a neat little show. *Polish* were wonderfully good, and an extra first was awarded here, and deservedly so. The White-crested Blacks were a long way above the average, and justify our remarks made from time to time that the breed is rapidly looking-up. It is now time for secretaries to take their turn and give now and then a class for this variety, and so yet more push on the cultivation of this one of the most striking breeds we have. Mr. Hinton's Silvers were capital, being good in crest and markings. In the Variety class Malays won all the prizes, and a good pen of the same breed (White) was commended. *Game Bantams* were many in numbers, but the preponderance were too large and heavy. In the next class *Sebrights* were first, second going to Blacks. Mr. Bloodworth showed a pretty pair of White Rose-combs, and Mr. Dugmore sent some fair White Booteds. *Ducks* had only one class, where Rouens and Aylesburys won the prizes. It is a mistake to have such general classes, and no one ought to support them. The *Sale* classes were large and fairly good; there were sixty pens in the two receptacles. The first-prize *Hamburgh* cock was capital, second going to a cheap *Brahma* at 25s.

The *Pigeons* were very good, some of the classes being unusually so. In the ten pens of *Carriers*, however, which were entered the Judge only found two pens up to the prize standard. *Pouters*, however, were better, and Mr. Holloway won with a good long bird. *Tumblers* were numerous and good. Messrs. Powell & Crane and Mr. Andrews entering ten pens between them. It was amusing to notice how many strings many had to their bows. We suppose they had designs on Sir Ivor Guest's point cup. *Dragoons* were a good class. The first-prize bird soon, we hear, found a new home for £5. *Fantails* were wonderfully good. It must have been a difficult job to choose the winners, for the Judge could easily have bestowed half a dozen prizes. After the winners we liked Mr. Loversidge's two pens and Mr. Hinton's. *Jacobins* again were capital, and here Mr. Andrews entered half a score of birds. Had there been no point cup he, perhaps, would have entered two. *Turbits* were neat, and nearly every pen was noticed. *Antwerps* were a capital class, and the Judge seemed to be quite at home among them; he had plenty of work, however, for many pens were very even in quality. The Variety class was very interesting. A *Sale* class (pairs) followed of fair quality, and a class for *Blue Dragoons*, apparently an after-thought, finished-up the catalogue,

where Messrs. Andrews and Shutler each had four pens, their final effort, perhaps, for the points cup; it was, however, won by the former gentleman, the latter having first, we believe, in the borough prizes for the best single Pigeon; while Mr. Gollop won first for the best pen in the poultry classes open to the borough. We furnish full awards below.

Brahmas.—Dark.—1. Lays. 2. H. R. Dugmore. c. Mrs. Radclyffe, G. Huey. Light.—1 and 2. Mrs. T. Turner. 3. W. Young. c. G. Jennings. — Chisman. — Bloodworth.
Cochins.—Buff.—1. J. Ogilvie. 2. Mrs. Radclyffe. vhc. Mrs. C. T. Parke. Any other variety.—1. — Bloodworth. 2. Mrs. Radclyffe. hc. G. Clarke. — Lays, G. Lias. c. F. C. Bentinck. J. Allen, jun.
Dorkings.—1. Mrs. Radclyffe. 2. — Bentinck. hc. Mrs. Pope. c. — Chisman. T. Rawlins.
Houdans.—1. — Chisman. 2. F. Holmes. hc. — Parten, J. Allen. c. — Elford. — Lays. — Chisman. — Bishop.
Polishes.—1. — Bentinck. 2. Rev. J. H. Ward. hc. — Vickery. — Huey. — Sturt.
Game.—1. — Farquharson. 2. C. Maria. hc. H. Stagg. c. F. Lewington. *Hamburgs*.—Pencilled.—2. J. Dibben. Spangled.—1. — Gollop. 2. — Boswell. c. F. A. Davis. J. K. Harris.
Polish.—Extra 1. T. P. Edwards. 1. J. Hinton. 2. G. Lias. hc. T. P. Edwards. — Bloodworth.
Spanish.—1. J. Chisman. 2. C. Parmiter.
 ANY OTHER VARIETY.—1. J. Hinton. 2. S. B. Perry. hc. H. R. Dugmore. c. G. White.
GAME BANTAMS.—1. Mrs. Farquharson. 2. — Hookaday. c. — Gollop. — Young. — Jennings. — Hardy. — Vickery, Coon Brothers. — Huey. — Young. — Bantams.—Any other variety.—1. C. H. Poole. 2. — Ashton. hc. — Bloodworth. H. R. Dugmore. c. H. R. Dugmore.
DUCKS.—1 and 2. Mrs. Radclyffe. hc. B. Oakes. — Martin, F. T. Rogers. c. W. R. Fryer. H. R. Dugmore.
 SELLING CLASS.—Cock.—1. G. Potts. 2. B. A. Hogg. hc. — Bentinck. T. P. Edwards. — Parmiter, Mrs. Parke. — Caws, W. Norman. G. White. P. Ogilvie. c. Mrs. T. Turner. Hen.—1. J. Bloodworth. 2. W. D. Dugdale. vhc. — Bentinck. W. D. Dugdale. hc. G. Clarke. — Radclyffe. T. P. Edwards, Mrs. T. Turner. — Bentinck. C. J. Woodford. c. — Whitehead.

PIGEONS.

CARRIERS.—1. W. Morris. 2. W. Turner.
POUTERS.—1. G. Holloway. 2 and 3. — Hicks. hc. — Harker.
TUMBLERS.—1. Powell & Crane. 2. J. Andrews. hc. J. Blackman, Powell and Crane. J. Andrews. c. C. Hurdle.
FANTAILS.—1. — Walker. 2. — Andrews. hc. — Walker. — Holloway. — Loversidge. — Hinton, W. Morris. c. — Munt. — Parsons, W. Morris.
JACOBINS.—1 and 2. J. Andrews. hc. J. Andrews. — Phelps. — Morris.
TURBITS.—1. — Washbourne. 2. — Maurice. vhc. H. Bolt. — Crafer, W. Young. C. Parsons. — Washbourne.
ANTWERPS.—1. Powell & Crane. 2. — Young. hc. G. Harris. — Fitz-Herbert. G. H. Billeit, Powell & Crane, W. D. Richardson, C. J. Woodford.
ANY VARIETY.—1. Powell & Crane. 2. — Barnard. hc. O. C. Farrer. — Dunman. J. P. Mills. — Washbourne. R. Wilkinson. c. — Farrer. — Dunman.
 SELLING CLASS.—1. J. Andrews. 2. — Young. hc. G. Holloway. J. Andrews. C. Hurdle. c. — Mann. — Harker. C. Hurdle.
DRAGONS.—1. — Lush. 2. R. Shutler. hc. Powell & Crane, R. Shutler. C. A. Pearson, W. Turner. c. — Pearson. Blue.—1, 2, and 3. — Shutler. vhc. Powell and Crane. J. Andrews. c. J. Andrews.

BOROUGH PRIZES.

Poultry Cup.—H. R. Dugmore. 1. G. Gollop. 2. F. Holmes. 3. W. Young.
 Pigeon Cup.—J. Andrews. 1 and 2. R. Shutler. 3. J. Andrews.
 JUDGE.—Mr. W. B. Tegetmeier.

ULVERSTON SHOW OF POULTRY, &c.

For some years there has been no Show of poultry at Ulverston, but this year it has been revived with good effect, a grand exhibition of poultry and cage birds being the result. The Music Hall proved too small for the number of entries, which were about five hundred, and many of the pens had to be placed on the ground rising three tiers high, the room between being limited; the day was a wretched one for light, so that in many cases judging was little more than guesswork, and in others a paraffin lamp was brought into requisition. This is almost entirely a country of *Game* fanciers, and nowhere do we find the *Game* fowl in so high a state of cultivation or so thoroughly understood, and the exhibits are almost to a lot the produce of the locality, and not merely a lot of birds brought together by £ s. d. only, and we have no hesitation in saying there has been no such display of this variety at any other show this season. In some of the classes a dozen birds might have been removed and then have left worthy recipients of the cups and prizes. In both single cocks and cockerels were birds of the highest merit, the competition being very close in both cases. Brown Reds were first and third, and Black Reds second. Of Red pullets there were eighteen, but we will not venture the assertion that these were well placed, although three good birds won the prizes, but this class occupied about the worst position in the Show. In cockerels any other colour, first and third were Duckwings, and second the best Blacks we have seen for the last dozen years. The pullets were Piles and Duckwings, and a very good class. *Cochins* were good in all classes of Buffs, the winners grand in all points. The Variety class cocks were first and third Partridge, second White. The first and cup for *Cochins* going to a Partridge hen, which it would be incorrect to say was better than the first-prize Buff, which is about perfect; but in her own class she is a marvel. *Brahmas* large classes and all the winners Dark, the Light birds poor. The quality of these classes was a surprise to us, the hen taking the plate over the cock. This is a splendid-styled bird, combining all the grand points of colour and marking. *French* a fair class, and the cup won by La Flèche. *Spanish* and *Dorkings* were but poor in both numbers and quality as compared with the foregoing. In *Hamburgs* were some good

When first a direct commerce between Morlaix and England was opened in 1851 by a steamboat called the "Grand Turk,"

from Southampton, lots of eggs were sent over from Brittany for sale. But these little Breton eggs were smaller than the ring-maker had ever thought possible, for they all went easily through the smallest ring, and of course, fetched only the smallest price. Since then the introduction of Brahma and Crève-Cœur has greatly improved the breed of the fowls.

The number of eggs annually laid by a fowl is estimated at fifty-two, which would weigh about 6 lbs., and as a fowl seldom weighs more than 3 lbs., a hen lays annually eggs double her own weight. Seventeen eggs will weigh on the average a kilogramme, or 2½ lbs. Honfleur eggs are regarded as the best in France, and generally fetch from 1s. to 1s. 6d. the hundred more than Cherbourg eggs. The Cherbourg cases contain about 1125 eggs each, and the half-cases from Honfleur 600. They arrive chiefly at Southampton, but imports are also made at Bristol, Weymouth, Poole, Shoreham, Newhaven, and Littlehampton. The Brighton and South-Western lines bring up 12,000 tons of French eggs a-year, or more than 4,000,000 a-week all the year round. The quantity shipped from Calais in 1874 was 508,100 kilogrammes in weight, or about 9,500,000 eggs. Mr. Hotham the British Consul at Calais, points out that the nature of the soil has much to do with the quantities of eggs laid. "In this neighbourhood," he remarks, "as well as near Boulogne, there exists a marked quantity of silica in the soil, highly favourable for egg-laying purposes; remove the fowls from this peculiar soil, and this fecundity ceases, and that this is the case about here as well as in the neighbourhood of Boulogne is well known." At Amiens, again, this same quality of soil is found, and the poultry from that district are remarkable for their laying qualities; indeed, they are the "most celebrated layers in France."—(Grocer.)

PIGEONS AT BIRMINGHAM.

I SEE in your report of the Pigeons at Bristol that "WILHELM RACON" alludes to the temperature of the Pigeon-gallery at Birmingham. I have visited that place at all hours, and can entirely corroborate what he states. The object, however, of my troubling you with these lines is to suggest that fanciers should join in a friendly remonstrance to the authorities before refusing to enter. I have found those in charge of the birds at Birmingham particularly obliging. At 4 P.M. on the Wednesday of the last Show I found the atmosphere in one part of the Pigeon-gallery quite unbearable from the gas below. I had no birds at that end, but for kindness' sake found the person in charge, who at once altered the gas and ventilators, and things were a little improved. Still nothing can make that gallery a proper place for Pigeons. Remonstrance has gained us much in the poultry department. Three years ago the birds spent a week on boards saturated with water from those wretched drinking-dishes, now they have sand (certainly little enough), supplied, proper drinking vessels hung up, and green food given daily. I shall be glad to join any fanciers in pleading for better treatment of the Pigeons.—O. E. CHESWELL.

THE LARGEST POULTRY-YARDS

In New York State are at Greene, Chenango County, kept by Mr. A. B. Robeson. He has 6000 Ducks, 4000 Turkeys, and 1200 hens. They consume daily sixty bushels of corn, two barrels of meal, two barrels of potatoes, and a quantity of charcoal. The meal, potatoes, and charcoal are boiled together and form a pudding, which is fed warm. He has commenced to kill them off, and employs fifteen hands to pick, two to kill, and one to carry away and pack on racks until frozen, then they are ready to pack for shipping. He also employs two men to cook the feed and feed them. He has twelve buildings for his fowls, from 100 to 200 feet long, 14 feet wide, and 7 feet under the eaves, with a door in each end of them.

Mr. Robeson bought most of his Ducks in the West, and had them shipped in crates—three dozen in a crate. He also has an egg-house, 35 by 50 feet, and four storeys high. The outside is 18 inches thick, and built of cut stone, laid in mortar, boarded-up on the inside and filled-in between the outside and inside wall with sawdust, it taking 3000 bushels. Mr. Robeson claims that he can keep eggs any length of time in this building. He also keeps the poultry that he is now dressing until May or June, which sells for 18 to 25 cents per lb., and it cannot be told from fresh-dressed poultry. He gets 10 cents per lb. for Turkeys' feathers, 12 for hens, and 65 for Ducks. He says that there is money in poultry, and he thinks he can make out of his 6000 Ducks enough to pay for his egg house, which cost \$7,000. He intends to keep a great many more next season, and has agents all over the country buying up poultry and eggs.—(American Fanciers' Journal.)

LABURNUM SEEDS POISONOUS.—Are the seeds of the laburnum poisonous? I have a tree growing in my fowl yard, the seeds from which have been falling for the last few weeks, during

which time several fine fowls in good condition have died suddenly.—W. BENNETT.

[The seeds of the laburnum are poisonous. There are many instances recorded of children being killed by eating them.—Eds.]

DO BEES TERRIFY CATTLE?

I WAS reminded by the remarks of "C." on hive bees as predatory insects, in the *Journal of Horticulture* the other week, of a complaint sometimes made against these bees by cattle graziers. During warm and sultry days in July and August, in the time of the white clover, the hive bee is at times accused of causing cattle to run about and be unsettled. All acquainted with rural affairs have noticed, in warm summer weather, cattle careering along or around their pastures, panting, foaming, and sweating, with their tails turned into the air or sticking out in a line with their body, seeking some stream to plunge into or find the shelter of trees or houses, all apparently trying to escape from some, to us, unseen foe. Now the humming or buzzing of bees are often blamed for this.

I should like to know the opinion of experienced bee-keepers on this subject. I think bees have little, if anything, to do with the matter, and this is one reason I have:—Some years ago, around the garden where my bees are kept, was a field of pasture with the ordinary quantity of white clover in full bloom. The bees, to get to the field, had to fly over an elder hedge that grew round the garden. Did the many thousands of bees crossing the hedge frighten away the cattle? Nay, verily; but so much did they like to chew and tear among the branches that an outer fence had actually to be erected to prevent them from destroying it altogether. The hives were close at the inside of the hedge, and I considered that I had some good ground for thinking that the humming of bees at work did not disturb cattle.—JAMES SHEARER, *Aberdeenshire*.

UNITING A LIGURIAN QUEEN TO COMMON BEES.

We cannot answer "Nemo" better than by extracting the following from our "Bee-keeping" manual:—

"As soon as you have become possessed of a Ligurian queen and her attendants, steps should be taken for removing the common queen from the stock or swarm to which the strangers are to be united.

"Where bar hives are in use the operation is sufficiently easy, but should not be attempted without the protection afforded by a bee-dress and thick pair of woollen gloves. The services of an assistant similarly accoutred will be found very useful, but are not absolutely indispensable.

"The middle of a fine day is the best time for the operation, which should be commenced by removing the stock a little either to the right or left of its usual position, which must be occupied by an empty hive, from which the top-board and comb-bars have been removed. The top-board of the full hive must then be shifted on one side sufficiently to expose a single bar, which may be carefully withdrawn after the attachments of the comb have been severed from the back and front of the hive by a bent knife. Both sides of the comb must be rigidly scrutinised, and any cluster of bees gently dispersed with a feather, until it becomes evident that the queen is not present, when it may be placed in the empty hive. The same process must be repeated with each successive comb until the queen is discovered and secured, when the bees may be either allowed to remain in the hive to which they have been transferred, or replaced in their original domicile. Sometimes the queen is not to be found on any of the combs, but may be detected among the stragglers remaining in the hive. In practised hands her discovery may be reckoned on with tolerable certainty during the first removal; but if she succeed in escaping detection the process must be repeated until she is secured.

"With common hives or boxes driving is the best method to adopt; and the bees, having been expelled from their habitation, may be knocked out on a cloth and searched over until the queen is discovered.

"Should the bee-keeper be unable to perform the operation of driving, fumigation may be resorted to, and the queen secured whilst the bees are in a state of insensibility.

"Should the queen have been removed and the bees restored to their original hive and position in the apiary, measures must now be taken to introduce the Italian sovereign to her future subjects. The first step will be carefully to remove the lid of the small box, replacing it with a slip of perforated zinc without permitting the bees to escape. The whole must then be inverted over an opening in the top of the hive containing the queenless stock, where it should remain undisturbed till the next day, when the perforated zinc divider may be withdrawn, and the union will be complete. The small box itself need not be re-

WEEKLY CALENDAR.

Day of Month	Day of Week.	JANUARY 20—26, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.				
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	Days.	m.	a.			
20	TH	Royal Society at 8.30 P.M. Linnean Society at 8 P.M.	42.4	30.6	36.5	7	57	4	25	8	5	11	13	24	11	19	20
21	F	Royal Institution at 8 P.M.	42.9	32.0	37.5	7	56	4	27	4	18	11	36	25	11	26	21
22	S	Royal Botanic Society at 8.45 P.M.	43.1	33.8	37.7	7	55	4	28	5	23	0	3	26	11	32	22
23	SUN	8 SUNDAY AFTER EPIPHANY. [Geographical So., 8.30.	42.6	32.4	37.5	7	54	4	30	6	30	0	53	27	12	8	23
24	M	Entomological Society (Anniversary) at 5 P.M. Royal	43.1	32.1	37.6	7	53	4	32	7	30	1	50	28	12	22	24
25	TU	Royal Medical and Chirurgical Society at 8.30 P.M.	43.4	32.8	37.9	7	51	4	34	7	57	2	59	29	12	36	25
26	W	Society of Arts at 8 P.M.	45.5	33.3	38.9	7	50	4	35	8	23	4	15	30	12	49	26

From observations taken near London during forty-three years, the average day temperature of the week is 43.9°; and its night temperature 32.0°.

From observations taken near London during forty-three years, the average day temperature of the week is 43.8°; and its night temperature 32.0°.

EPIPHYLLUMS—TABLE DECORATIONS.—No. 1.



LATE in autumn, also throughout the winter, these are amongst the gayest and most useful of decorative flowering plants. Their graceful pendant habit, combined with flowers mostly shades of red, with purple or violet shading and white throats, produced from the points of the arching shoots, and being very floriferous, render them particularly ornamental, especially when viewed by artificial light.

Need we be surprised that in the usual brilliancy of rooms by lights, mirrors, &c., contrasting objects are introduced to give tone—often intentionally higher tone, but in reality subduing, rendering more agreeable the objects that without such rest for the eye would, after a first impression, be oppressive? Plants upon a dining-table, or vases, &c., of flowers with the indispensable sprays of green foliage are to the guests what an oasis is to the traverser of a desert, or the relief found in the evergreens when the ground is covered with snow. In that sense, and that only, can I see the fitness of plants or flowers for dinner-table decoration; they are employed to ornament, and at the same time subdue, and render more agreeable the brilliancy of their settings.

Light and shiny substances have the greatest foil in black, but the contrast is not pleasing. Dark objects become in the distance apparently blue, as that of the sea and sky, which makes a ship with sails unfurled so prominent an object on the water. But if we multiply the ship into a fleet of ships its individuality and distinctness is absorbed into the mass of white. It is the same with plants and flowers. Pretty, indeed, all flowers are, but if embedded in dining-tables to represent a parterre their individual beauties are frittered away. Plants employed in table decorations to be effective must have their individual forms preserved, while their arrangement must be in harmony with their surroundings.

If the articles upon the table be massive, to arrange the plants or flowers massively, or so as to appear so, is still to render the whole more heavy; whilst to have light plants or flowers lightly arranged is to make more prominently massive their heavier surroundings, and yet this is the most pleasing combination; for when the objects are few and massive the plants which are to relieve them must be few in number, graceful, and elegant, for in this as in everything else beauty is not to be sought by adding to what is possessed in full by an object, but what is wanted is a "finish," which in most instances is found in diametrically opposed forms; for what so beautiful as the tree or shrub of graceful habit viewed across a breadth of closely-mown verdant lawn, or the spray of a Willow whipping the waters of a lake?

Flat surfaces are not tastefully decorated by low plants, and stiff formal objects have not fitting contrasts in the stiff and erect habit of trees. To plant a valley with tall trees is to convert it, so far as trees can do so, into a plain, making a level of a hollow, destroying those undulations

of surface which are so pleasing in the landscape; whilst to plant a hill with Pines is not only to make an object a feature in the landscape, but to make the hill higher and the hollows appear deeper.

It is the same even with the dinner-table as with other decorations, admitting of many combinations, and into which will creep incongruous innovations, not the least being that of converting the table into mimic flower beds cut in the cloth, with lead forms let into the table, the forms raised of clay and filled with flowers, than which nothing can be in worse taste. Flat and formal arrangements of flowers such as that can only be compared to the offering of prizes at rural flower shows for designs for villa gardens, which though exhibiting much ingenuity are at best toys, and further no purpose but that of mimicking the real and frustrating any advance in useful horticulture.

It has already been stated that the greatest contrast to white is black; bright shining substances, however, are intensified, not in contrast with black, but are most brilliant upon a white ground—the white heightening the tone of that to which it is contiguous, but the black from the effect of the white light is more or less destroyed by the reflection by the black of the light of the white. All the primary colours—red, yellow, and blue of painters (which are not those of the prismatic spectrum)—gain by their juxtaposition with white, and when white surfaces are viewed simultaneously with coloured objects contiguous to them they are sensibly modified.

White heightens light tones of any colour, and possesses the advantage of separating those whose colours are mutually injurious: hence the green of plants is the greatest relief to the eye from the whiteness and brightness of a dining-table; but it must not be supposed from that that they are the most effective. Beautiful as are the finely-divided fronds and gracefulness of Ferns, or the more stately yet elegant (and glaucous in some instances) forms of Palms, they are not so effective as if the plants employed combine red with green, as instance the coral berries of *Nertera depressa* on moss-like foliage, the berries of the Holly when the ground is snow-clad, and the scarlet bracts of *Poinsettia pulcherrima*; the same applies to drooping or to erect forms, the red being beneath or associated with the green, as *Russelia juncea*, *Thyracanthus rutilans*, or *Epiphyllums*; also in combination with green, as in some *Dracenas*, the bright pink of the young fronds of some Ferns, as *Lomarias*, being very telling when the plants have deep green fronds as well. Green and yellow, as that of *Oxalis* *Johannis*, are not so effective as those of *Oxalis undulatum*, which in the mature state has crimson markings, and the same remarks apply to *Dracenas*. Those having beauty in the highest degree are those combining red with green, though in some, as *D. amabilis*, the green, white, and pink are presented in the foliage, which is very pleasing.

Plants with white stripes in the centre or the variegation disposed on the margin of the leaves accord well, but silvery-leaved plants, as a rule, are not effective; yet plants with a

silvery lustre on a dark ground as that of *Aralia Veitchii*, and a contrasting hue as this has on the under surface, being dark red, the effect is splendid; this is probably the finest representative of a table plant we possess. White flowers appearing above or amid green or marbled foliage with red under surface, as *Cyclamens*, are appropriate, yet the effect is considered heightened by the addition of red; for white we have sufficient in the cloth, and shining objects enough in its accompaniments; we require first green, then red, and separating by white interspersed with green; other shades of colour, as yellow, contrasting with maroon or other deep shades of colour up to black. Pink and rose colours are made to appear brighter and deeper by contrast with deeper-tinted colours, and with green, when viewed under artificial light, are good in contrast with white or yellow under lamplight. Purples under night lights lose all the blue and become lighter or deeper shades of red as they are light or deep by day in purple colouring. Orange is a fiery scarlet, very bright; and flowers tinged with lilac, as *Primula sinensis* var., are intensified in colour under artificial light. Plants with marbled foliage and metallic-lustered, as *Cissus discolor*, are very beautiful, and most plants with veined foliage are effective. As a rule bright colours are intensified by artificial light, and yet without green they have a heavy appearance. In the matter of form almost all plants of graceful aspect with finely-divided parts or long and narrow foliage are available for the table.

Orchids always have so much dissimilarity with other subjects as to accord well; but their flowers only have this advantage, as the habits of the plants are in a majority of cases highly objectionable from a decorative point of view. Exception must, however, be made of some *Cypripediums*, *C. venustum* being very useful, and the *C. barbatum* vars. and the singular *C. caudatum*, whilst the very common *C. insignis* is a very effective plant. The dwarfest of the Pitcher-plants tell well, especially the New Holland one, *Cephalotus follicularis*; whilst no plants under light are more beautiful than the Sundews, a well-filled pot of *Drosera rotundifolia* being very appropriate. Berried plants, as *Solanum capsicastrum* with its orange-yellow berries, or even *Capsicum* as *Prince of Wales* with its bright lemon-coloured pods, and the deeper and more telling *Yellow Gem*; and there is a kind of *Capsicum* with bright red Cherry-like pods which is very effective. But as I have carried this dissertation much further than was intended I shall close with a few observations as to height.

It is, I think, a generally accepted principle that the plants should be of such a height, or so disposed, as not to interrupt the view of guests from one side to another. It is clear the plants must be low if when seated conversation is to be carried on across the table, but *Dracenas*, *Aralias*, *Palms*, and other plants have the foliage so disposed as to admit of a view through; and these I consider, from their greater distinctness, lightness, and clearness of feature, are the truest representatives of that contrasting elegance which is required in dinner-table plants.

Some plants are best seen as tall or standard plants. Of this class are most berried plants and the plants at the head of this article, of which culturally I must refrain comment for another communication.—G. ASBRY.

FRUIT PROSPECTS—PRUNING.

I am afraid that the past summer will long leave its marks on our fruit trees. When I saw the Plum and Pear leaves taking on their autumnal colours, and falling rapidly when touched by the breeze, I was in hopes that in spite of the absence of light and heat the trees had somehow managed to do their work perfectly; but, on applying the pruning-knife a different tale was told, the wood is weak and green beyond all precedent. There are plenty of fruit buds, but oh! so puny that it seems impossible for many of them to be perfect, and I fear the chances of another fruitful year like the one just past are rather remote.

I do not want to raise needless alarm, but it is as well to take a survey of the situation and see as near as we are able what are our chances of success, in order to be able better to direct our actions. For my own part I not only expect fruit to be scanty, but that the trees will also be very seriously injured. Unripe wood, where it is left and survives the winter, will be a prey to canker and all diseases and insects which fruit trees are subject to. Where wood is unripe, too, of course the roots are in the same condition, and will in conse-

quence die-back more than usual, and be later in starting in spring, although the upper portion of the plant will not wait for them.

What, then, is to be done? I will endeavour to say what I have done, and leave others to judge for themselves whether it is worth while to take a leaf out of my book. I have given up pinning over the prospect of scanty crops this year, and am looking farther a-head. I will do the best I can to keep my trees healthy, and to this end I have gone from my usual plan and have pruned all trees not grown against walls very hard indeed, relying for fruit principally on spurs situated on the old wood.

Trees which have grown unshapely or are weakly, I have taken the opportunity to cut-back with a saw so as to bring them into a goodly form. Had there been an immediate prospect of fruit on them I should have hesitated to take such extreme measures, and the trees in a few years would have become unsightly or useless; now I hope to be rewarded with good-formed trees next year, and if the seasons permit with fruit of good quality in the year following.

Trees on walls, with the exception of Peaches, are much better matured. The last-named I thought it advisable to partially protect from the severe frosts we had before the leaves had all fallen. The fruit buds are better developed on the cordon trees than on those trained in the usual way. Bullfinches, though numerous, have not yet attacked the fruit buds. I am afraid this is a bad omen, they do not think them good enough.

I envied a gardener writing from the north in a contemporary last month, where he said though the frost was severe the wood was thoroughly ripe and would not be injured. Is such really the fact? If so, I shall be inclined to go northward to see some fruit when the time comes. I am afraid many people, however, take only a very superficial view of the case. I would advise another look; and although the end of January is later than pruning ought to be done, it would be better to prune even in March than leave unripe wood, and where the wood is in the same pitiable condition as it is in this neighbourhood I say, Prune hard.—WILLIAM TAYLOR.

RANUNCULUSES IN POTS.

SELDOM are these beautiful spring flowers cultivated in pots for the decoration of the conservatory, while *Crocuses* and *Tulips* are so grown in hundreds of thousands. That the latter are gay is not disputed, we will even admit them to be gorgeous; but yet they are favoured by fashion, for for true beauty neither one nor the other can rival well-grown pots of *Ranunculuses*.

Ranunculuses are cheap, are of the easiest culture, and when in bloom are not only most ornamental, but their flowers are admirably adapted for cutting for vase-decoration. *Ranunculuses* will, however, not force after the manner of the other bulbous flowers alluded to, and that is, perhaps, the reason why they are so seldom cultivated in pots. Yet if they will not force, according to the common acceptance of the term, their flowering may be accelerated some weeks, or, at any rate, distinctly before those in the open ground unfold their beauty.

Both sections of *Ranunculuses* may be grown in pots, but the *Turbans* are preferable to the *Persians* by the greater massiveness of the former and their earlier-flowering nature. Pots of the brilliant scarlet and pure white varieties when well managed—the foliage of the plants healthy and the flowers robust—are amongst the most effective of low-growing decorative plants in the early spring months.

In order to have them blooming at the earliest stage and in the best condition, the roots should be potted in October and be plunged in ashes in cold frames, the surface of the pots being also slightly covered with ashes or cocoa-nut fibre refuse. But even if potted now the plants will make an excellent display, and are sure to be admired if well cultivated.

For pot culture the finest roots should be selected, and five should be placed in a 6-inch pot. The soil cannot be too heavy and rich, except the inch at the top of the pots in which the roots are in immediate contact, and this should be light and sandy. The pots should be plunged in ashes, and should be kept plunged until the flowers show colour, of course allowing the plants sufficient room to develop themselves. They only need a cold frame, and protection from frost with mats or other covering. When in growth the plants cannot have too much light, and as their growth increases so must the supply of water. Drought at the roots is fatal to healthy

foliage and fine flowers; hence it is advisable to keep the pots plunged.

By a judicious system of airing, the frame treatment will bring the plants into flower three weeks earlier than those planted in the garden, and they will be equally fine. A most important point is to keep the glass clean, for with light the plants will not be injuriously drawn even if only a small quantity of air is admitted, and the warmer temperature will expedite the blooming season.

I have been in the habit of growing bulbs largely, and, next to the Hyacinths, the Ranunculuses have been the most prized. If a failure occurred it arose from exposing the pots to a dry atmosphere, and in attempting to force the plants in a higher temperature than they would endure. A cool frame, judicious attention, and patience have always brought me a reward of healthy plants and handsome flowers. As they have rewarded me so will they others who treat the plants similarly. Try them.—R. C. B.

HÆMATOXYLON CAMPECHIANUM.

THIS evergreen stove plant, which attains to a moderately-sized tree in South America, furnishes the logwood of com-



Fig. 12.—Hæmatoxylon campechianum.

merce, and from the colour of which its name is derived—*haima*, blood, and *xylon*, wood. It belongs to the order of Leguminous plants, and has agreeable foliage and slender racemes of yellow flowers. It is of easy cultivation and may be readily increased from seeds, which, however, germinate more freely if steeped in warm water for some hours before sowing. Cuttings of partially-ripened young shoots also strike freely in sand under a bellglass. A compost of loam, peat, and sand is suited to the requirements of this plant with a temperature in summer of 70° to 85°, and in winter 50° to 55°.

It is a native of Campeachy, the shores of Honduras Bay, and other parts of tropical America; but it has been introduced into Jamaica, where it has become naturalised. The flowers are fragrant, and give out an agreeable odour said to resemble that of the Jonquil. The wood is hard, compact, and heavy, with a specific gravity higher than that of water; has

a fine grain, and is susceptible of a fine polish. It is chiefly employed by the calico printer to give cotton a black or a brown colour; if it be dyed with an alum mordant in a decoction of logwood it becomes black. It was first cultivated in Jamaica in 1715, from seeds brought from the Bay of Campeachy, and was introduced into English gardens in 1724. Its colouring properties depend on a peculiar principle called *hematoxylin* or *hematin*.

MISTLETOE CULTURE.

MR. KENTISH in his entertaining paper has stated that the Mistletoe cannot keep the tree alive on which it is growing, neither can it support itself if its foster parent is denuded of its own growth. This may be true, yet the Mistletoe will flourish when the tree to which it is attached has but very few live twigs. Some of the finest "Mistletoe boughs" that I have seen were those on which the parasite had so far taken possession of a tree that the growth of that tree was almost entirely subdued: still there were some live twigs.

But what I wish to particularly mention now is a mode of growing the Mistletoe which I once saw in the nursery of Mr. Charles Van Geert at Antwerp. These were miniature Mistletoe trees grown precisely after the manner of standard Roses. The stems, if I recollect rightly, were Thorn, 3 to 4 feet high, and the heads of Mistletoe were round, dense, and about a foot in diameter, some being covered with fruit. But in these heads a few twigs of Thorn were encouraged to grow, but they were so few as scarcely to be noticeable. These miniature Mistletoe trees had a most novel appearance, and I was not surprised to hear that they had sold rapidly. Only a very few were left at the time of my visit.

It would be instructive to know if Mistletoe can with any degree of certainty be cultivated in that manner, and whether it is established by grafting or seeds. It is an experiment that might well be made in the Mistletoe-growing districts, and plants similar to those which Mr. Van Geert had produced at Antwerp could not fail to create a sensation in Covent Garden Market at Christmas time.—J. B.

OLD APPLE TREES.

THE able way your correspondent "RADICAL CONSERVATIVE" has treated the subject of old trees at page 82 leaves little to be said, and what I may add shall be confined to old Apple trees. I confess, like "RADICAL CONSERVATIVE," to have some misgiving on the subject of pruning old Apple trees, but I differ with him entirely on the subject of heading-down and re-grafting them; for although the scions may take very well, and a strong growth follow, it often happens that the trees die in less than half a dozen years after the operation, and long before a similar tree would have succumbed that had not been so treated. So repeatedly is this the case that the experienced orchard manager knows at a glance whether it is worth while subjecting a tree to the process or not.

As an example of this I may mention a case that has only received its final termination the day I write this. Three years ago I received a number of grafts of new kinds of Apples which I was anxious to propagate, but not having young stocks, an old tree was cut down. The tree was healthy, and on an average might yield, perhaps, a dozen or more bushels of fruit annually. Well, the branches of this tree were cut off mostly at places where they were as thick as the handle of an ordinary working tool, and were crown-grafted. The scions took very well, and for two years looked promising, but last year I found one-third of the tree died in early summer and a similar portion later on, leaving only a distorted, one-sided, ugly object that evidently was only likely to drag out a wretched existence, so the spade and mattock made short work of it to-day. I may add that I had previously secured scions of most of the kinds the year after the tree was grafted, as its death was not unlooked for; and I only mention it here to prove the inutility of re-grafting old trees, for the fellows to this one that were operated upon are still healthy and bearing, one or more of them having had twenty bushels of fruit on it the past season, and likely to do service for many years yet. So much for re-grafting old trees.

And now to the matter of pruning old trees. The operation performed above was only an extreme case of pruning, the tree being only cut down, or rather its branches cut off, leaving some forty or fifty heads or points, but showing in the result

the same progress of mischief that follows less severe pruning. An old tree cannot endure severe amputation. Our hospitals, like our orchards, prove that with the aged surgical operations are likely to prove fatal; the old Apple tree might continue to do good service if left alone for several years, but subject it to the surgical operation of the pruner and it gradually succumbs. It is for this reason that old trees during the latter part of their fruit-bearing lifetime are in general left alone in the orchards in Kent, and the knowledge that it is best to do so has not been arrived at without plenty of failures in pruning and attempting to improve the appearance of the trees. I may say, as the result of much practice and observation, that in general neither the knife nor saw ought to be used to an Apple tree during the last ten years of its life, assuming it is expected to arrive at the age of forty or fifty years. Of course there are plenty of trees in a fair bearing state older than this, and many are old and worn out before that time, so that some discretion is required to judge when to cease the pruning, and the practised eye can easily tell this by the appearance of the trees.

Much has been said of the thickness of the centre of an unpruned tree. I have an opportunity of seeing hundreds of unpruned Apple trees, and their centres invariably consist of naked limbs; it is nearer the outside where the thicket really is. Supposing an aged tree is left alone a number of years, the densest part of that tree will be found within 3 feet of the extremities of the branches; and what fruit there is, much inside the outer ends of the branches is never of any account. Generally there is plenty of room for a heavy crop on those branches that project outwards, and the bulk of the fruit will be found within 2 feet of their extremities. "Opening out the centre of a tree" seems to me a process only required in very young trees, Nature doing it for us in the old. Those who want to hasten the decay and death of an Apple tree, however young, cannot do better than persistently follow up the practice of finger-and-thumb pinching in summer; their tree will be on the rubbish heap before their neighbour's which has been let alone has fairly arrived at its best, and the produce of the latter will probably have been many fold that of the former. My final advice on the subject of old Apple trees is either to let them alone or destroy them entirely, for I have found no middle course satisfactory.—J. ROSSON.

REPORT ON CELERIES

GROWN FOR TRIAL BY THE FRUIT AND VEGETABLE COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY AT CHISWICK 1874-5.

THE seed for this trial was presented by Messrs. Carter and Co.; Messrs. Barr & Sugden; Messrs. Minier, Naah, & Nash; Messrs. Harrison & Sons; Messrs. Osborn & Sons; Messrs. Stuart & Main; Messrs. Veitch & Sons; Messrs. Vilmorin et Cie.; Samuel Simpson, Esq.; Mr. B. Dean, and Mr. A. Parsons.

There were forty-seven reputed varieties received, of which twenty-three were red and twenty-four white. These the Committee by the detection of numerous synonyms reduced to twenty—viz., seven red varieties and thirteen white, which have been decided to be distinct.

The seed was sown early in March in heat, and the plants pricked-off and planted-out early in June in single trenches, and treated after the ordinary manner. The plants were frequently examined by the Committee whilst growing, and again when fully grown, and a portion of each sort was left to test their capabilities of standing the winter.

The season of 1874 was a particularly favourable one for the growth of Celeries, so that the trial was a satisfactory one.

1. RED VARIETIES.

1. MANCHESTER RED [*synonyms*, Laing's Mammoth, Radford's Pink, Sulham Prize Pink, Hooley's Conqueror Prize, True Manchester, and Giant Red].—Plant of strong and vigorous growth, attaining an average height of 3 feet 4 inches. Leaflets broad green. Heads compact, average girth 12 inches. The outer leafstalks are moderately broad, slightly shaded with red. Heart very solid; the stalks, broad, thick, and fleshy, blanching for about 12 inches. A very excellent sort, stands the winter well. This is the largest variety.

2. IVKEY'S NONSUCH [*syns.*, Violet de Tours, Osborn's Select Red; London Market; Red].—Plant of strong and vigorous growth and habit, average height 3 feet. The leaflets are broad, deep green, the pinnae more widely situate than in

other varieties. Heads compact, average girth 12 inches. The outer leafstalks flat, of a deep rosy-red colour. Hearts very solid, blanching for about 18 inches. Stalks very solid, broad, thick, and crisp, of a fine nutty flavour. A very excellent sort, and one of the best to stand the winter.

3. KIMBLEY'S RED [*syns.*, Improved Solid Red; Stuart and Main's Solid Red].—Plant of regular but somewhat spreading habit of growth. Height 2 feet 6 inches. Leaflets broad, deep green. Heads compact; average girth 11 inches; the outer leaflets narrow, rounded, and slender, of a deep rosy red colour. Hearts very solid, blanching for about 12 inches; the stalks broad, thick, and crisp, of a fine nutty flavour.

4. CARTER'S INCOMPARABLE CRIMSON [*syns.*, Carter's Incomparable Dwarf Crimson; Hood's Dwarf Red].—Plant of close compact growth. Height 2 feet 6 inches. Leaflets rather broad, pale green. Heads very compact; average girth 11 inches. Outer leaflets narrow, deep rosy pink. Hearts very solid, blanching for about 11 inches; the stalks thick and fleshy, and of fine quality. This is the dwarfiest red Celery, and a good hardy variety to stand the winter.

5. WEBSTER'S No. 1. [*syn.*, Webster's No. 4].—Plant of somewhat slender growth. Height 2 feet 10 inches. Leaflets broad with short petioles, giving it a bushy compact appearance. Heads compact, average girth 10½ inches; outer leafstalks slender and narrow. Heart solid, blanching for about 12 inches. The stalks solid, thick, very crisp, and of good quality.

6. LEICESTER RED [*syns.*, Major Clarke's Solid Red, Turn-moss Red, Ramsey's Solid Red].—Plant of erect compact growth, presenting a very uniform appearance when growing. Height 3 feet. Leaflets rather small, deeply serrated, of a shining green colour, with a sort of silvery shade. Heads very round and compact; average girth 12 inches. The outer leafstalks are rather narrow or rounded, of a clear rosy pink colour. Hearts very solid, blanching well for about 12 inches; the inner stalks broad and thick, very crisp, and of a fine nutty flavour. One peculiarity of this Celery is, that of the core rising about 2 inches in the heart, as if it were to run to seed. This core portion is by many considered the best part. This variety from its close compact growth blanches easily, and is the best Celery for autumn or early-winter use, but it does not stand the winter well.

7. WRIGHT'S IMPROVED GROVE RED.—Plant of the same appearance as Leicester Red, but somewhat dwarfer. The heads are also larger, being 18 inches in circumference. Hearts large, very solid, and good. This is a very excellent sort.

2. WHITE VARIETIES.

8. GROVE WHITE.—Plant of strong and robust growth. Height 2 feet 9 inches. This is an exact counterpart of the Grove Red, but white and possessed of the same excellent qualities. Does not stand the winter so well as other sorts.

9. INCOMPARABLE DWARF WHITE [*syns.*, Plain Blanc Court Hatif, Sandringham, Dean's Compact White].—Plant of very dwarf and compact growth. Height about 24 inches. Leaflets small, pale green. Heads very compact, average girth about 10 inches. Outer leafstalks broad and deeply ribbed. Hearts solid, blanching about 10 inches, and of a pure white. The stalks broad, thick, fleshy, crisp, and of fine quality. This is one of the best sorts, its close dwarf growth renders it easy to blanch with remarkably little earthing-up. It is good for early use, and also stands the winter well.

10. PLEIN BLANC.—Plant of dwarf compact habit. Height 24 inches. This is much of the same character as the preceding, but smaller and inferior. It is useful for an early supply.

11. A COURTE.—Plant small, height about 24 inches. Leaflets small. Heads small, outer leafstalks very narrow. This is not of much use only for very early work, the small heart blanching very quickly. It soon runs to seed.

12. TUNO GRAND.—Plant of robust growth. Height 2 feet 6 inches. Leaflets large, broad deep green; outer leafstalks broad, much ribbed. Heart small. It may be useful for an early supply, but soon runs to seed.

13. STRMOUR'S WHITE [*syns.*, Goodwin's White; Northumberland Champion White].—Plant of somewhat spreading habit of growth. Height 3 feet. Heads large, 12 inches in girth. Outer leafstalks broad, very deeply ribbed. Hearts solid, blanching to nearly 14 inches. The stalks broad, thick, and fleshy. This is the largest-growing white Celery, and apt to become pithy if very strongly grown.

14. PRINCESTON WHITE [*syn.*, Veitch's Silver White].—Plant of somewhat slender growth. Height 3 feet. Leaflets

small, deep green, sharply serrated. Heads large, girth 11 inches. Outer leafstalks narrow. Hearts somewhat loose, blanching to about 12 inches. The stalks rather soft but of fine flavour. Rather tender.

15. **DIXON'S MAMMOTH WHITE.**—Plant of close compact robust growth. Height 2 feet 8 inches. Leaflets broad. Heads large, girth 14 inches; outer leafstalks very broad, about 2 inches. Hearts very large, blanching about 11 inches, somewhat soft, but excellent. It stands the winter well.

16. **GREAT EASTERN.**—Plant of loose spreading habit, so much so that it is difficult to keep the heads together, and much addicted to throwing-up side shoots. Height 2 feet 9 inches. Leaflets small pointed, very pale green. Heads small, girth 10 inches. Hearts loose and small. A very worthless sort, and decays early.

17. **HAYWOOD'S WHITE QUEEN** [syn., Stuart & Mein's Giant White; Goodall's Flat-stalked; Webster's White].—Plant of robust growth. Leaves spreading. Height 2 feet 9 inches. Heads large, 13 inches in girth; outer leafstalks very broad (about 2 inches), much ribbed, and coarse. Hearts solid, blanching to about 14 inches. The stalks very large, broad, thick, and fleshy; but without much flavour. An excellent sort to stand the winter.

18. **VEITCH'S SOLID WHITE** [syn., Danesbury].—Plant of close compact growth. Height 2 feet 6 inches. Leaflets broad, very deeply toothed or serrated, giving it quite a distinct appearance. Heads compact, girth 11 inches; outer leafstalks rather broad, deeply ribbed, pale green. Hearts very firm and solid, blanching for about 12 inches. The stalks broad, thick, crisp, and tender. A very excellent variety, and stands the winter well.

19. **BOSTON MARKET.**—Plant dwarf, from 18 to 20 inches high. Leaflets small pointed and sharply serrated. This variety is not used to produce a single head as the ordinary Celeries, but having the peculiarity of forming a number of side shoots or small heads which are blanched. It is suited for early work, and it begins to run to seed almost as soon as planted out.

20. **FRISK, Curled or Garnishing.**—Plant of loose growth. Height about 2 feet. Leaves very pale green, and deeply cut or curled almost like Parsley. It is very ornamental. The leaves may be used for garnishing, but it is of no other use. It is very tender, and runs early to seed.

21. **TURNIP-ROOTED** [syn., Celery navet; Rave; Raved'Erfurt; Soup Celery].—This is quite a distinct vegetable, the plant forming a large bulb at the base of leafstalks like a Turnip. This bulb is used in soups much in the same way as Turnips, and not the leafstalks as in other Celeries, and requires no blanching. It is not much cultivated in this country.—A. F. BARNON.

ROYAL HORTICULTURAL SOCIETY.

JANUARY 19TH.

FRUIT COMMITTEE.—Henry Webb, Esq., in the chair. Mr. Walker of Thame sent bulbs of his Model Long-keeping Onion, which is identical with White Spanish, except that the skin is tinged with brown. A dish of Witloof or Hearting Chicomery was exhibited from the gardens of the Royal Horticultural Society from seed supplied by Messrs. James Carter & Co. This excellent salad vegetable had been blanched in the way of Seakale, and was awarded a first-class certificate. Mr. William Taylor, the Gardens, Longleat, sent a dish of Orangefield Tomato which was much commended. Messrs. Stuart & Mein sent a collection of Chilian Beet of various colours, to which a letter of thanks was awarded. The same gentlemen also sent specimens of a prolific Scotch Kale which formed secondary curled blades on the leaves, to which a letter of thanks was awarded.

Mr. Chambers, Westlake Nursery, Springrove, sent a box of Blenheim Pippin Apples, to which a letter of thanks was awarded. Mr. Cox exhibited a dish of Redleaf Russet, which received a first-class certificate last year, and these quite confirmed the good opinion formed of it by the Committee. A dish of Beurré de Jonghe Pear was received from the garden at Chiswick, and was found to be of exquisite flavour. Josephine de Malines was also very well flavoured. Beurré Sterckmans and Belle de Noël were not so well flavoured, some of them not being quite ripe. Glout Morceau and St. Germain were of good but not high flavour.

Mr. William Paul having offered a prize for the best bunch of Waltham Cross Grape exhibited before the Society in January, 1876, two competitors exhibited, and the prize of £10 was awarded to Mr. James Douglas, Loxford Hall.

FLORAL COMMITTEE.—B. B. Peckans, Esq., in the chair. At this the opening meeting of the year there was a considerable attendance of horticulturists. The day being mild also per-

mitted the removal of tender plants from their homes, and Messrs. Veitch consequently made a most attractive exhibition. Only one first-class certificate was awarded on this occasion, this honour going to an Australian Dendrobe exhibited by Mr. Denning, gardener to Lord Londesborough—*Dendrobium teretifolium*. This remarkable plant has straw-coloured flowers individually small, but striking by their great profusion. The plant is growing on wood, the foliage having a curious resemblance to gigantic roots which hang perpendicularly from the slender suffrutescent stems. It is a very distinct species, and has been appropriately alluded to as the Cobweb Orchid.

Messrs. Veitch & Sons' splendid display consisted of about fifty Orchids, a few Palms, hybrid Amaryllises, and other ornamental plants. Amongst the Orchids were *Cypripediums* *Crossianum*, *tesselatum*, *Argus*, and *Schlummi* album; *Odontoglossums* were represented by *O. Roezlii*, *Roezlii* album, *Rossii* majus, *Alexandra*, *Hallii*, *Pescatorei*, *Bicknense* splendens, *O. Phalaenopsis* and *Andersonii*. Amongst *Cattleyas* were *Skinnerii* in variety, and *trianae*. Noticeable also were *Oncidium* *cheiroporum*, *Masdevallia tovarensis* very fine, *Angraecum sesquipedale* with six blooms, and *Sophranthes grandiflora* extremely bright. Besides the Orchids, *Anacochilus Dawsonii* had eight spikes of flowers, and *Tillandsia Lindenii* was remarkably robust, one stout spike having flowers, and four other spikes were clear of the axis. More vigorous still was *T. Zahnii*. Exceedingly brilliant was *Aphelandra aurantiaca* *Roezlii*, the plants being dwarf and very fine; it is difficult to imagine a more fiery colour than is possessed by the spikes of this fine plant. The *Amaryllises* were in colours of cream, crimson, and scarlet, striped, mottled, and flaked, some of the flowers being of good form. *Erantherium pulchellum* was dwarf and good, and the new Fern, *Nephrolepis philippinensis*, was in excellent condition.

Messrs. Veitch also sent a collection of fifty *Cyclamens* in small pots. The plants were remarkably well grown, and the colours rich and varied; a few of the whites being especially pure. Noticeable as towering above its fellows was a gigantic plant named *Model*; the flower stems of this variety are fully 18 inches in length and proportionately stout, the blooms also being very large.

Votes of thanks were most worthily awarded to Messrs. Veitch for these collections, and the Committee further recommended them as being worthy of a medal.

Cattleya bulbosa was exhibited by Mr. Hill, gardener to Sir W. Marriot, Bart., Down House, Blandford, and a cultural commendation was awarded; the plant was on wood and had fifteen flowers, and was considered to be a very superior specimen. *Masdevallia Davisii* in splendid health, the dozen yellow flowers being very effective, was exhibited by Mr. Murrell, gardener to W. Burnley Hume, Esq., The Hill House, Winterton, Yarmouth. This is one of the Chelsea seedlings which received a first-class certificate last year; since then the plant has greatly improved both in the size and colour of the flowers, and is a superior variety.

Mr. Green, the Botanical Nursery, Holmesdale Road, Reigate, exhibited a collection of succulent plants, for which a vote of thanks was awarded. Amongst these *Mesembryanthemum truncatellum* received a botanical certificate. These are very curious plants, as also were some miniature *Masdevallias* from the same exhibitor. The collection included *Echeveria metallica crassa elegans*, a promising variety with fimbriated leaves.

Messrs. Stuart & Mein, Kelso, sent *Rhipsalis pachytrichs*, its Cactus-like leaves being fringed with flowers; and Mr. Chambers, Westlake Nursery, Isleworth, sent seedling plants of *Hoya carnosa* with marbled foliage. The plants were not in bloom.

PAPYRUS ANTIQUORUM.

I was much interested in reading your remarks on the *Papyrus antiquorum*, as I had no idea it would live out of doors in our climate even during the summer. I am extremely fond of aquatic plants, and have a tank in my garden where several flourish well, and amongst them the beautiful *Cyperus alternifolius*, also the native *Cyperus longus*, of which family I believe we may claim also the diminutive *C. fuscus*, but I fear it is nearly if not quite extinct, unless Mr. Robert Parker of Tooting succeeded in discovering a few plants in a locality of which I gave him intimation that it had been found.

Some of the *Panicums* make striking and elegant additions to the summer flower beds. *P. plicatum* flourished well with me last year and flowered freely.

If any of your correspondents can furnish me with any additional names of aquatic plants I shall feel extremely obliged.—M. A. WALKER.

ROYAL HORTICULTURAL SOCIETY.—The Council recommend for the offices of President, Treasurer, Secretary, Committee-men of the Expenses Committee, and Auditors of the Society,

to be elected at the Annual Meeting on the 8th of February:—*President*, Rt. Hon. Lord Aberdare; *Treasurer*, Henry Webb; *Secretary*, Robert Hogg; *Expenses Committee*, William Campion, Henry Webb, and Vice-Admiral W. W. Hornby; *Auditors*, Conrad H. Pinches, James F. West, and John Lee.

MUSK AS A BORDER PLANT.

Nor nearly so freely is this odoriferous old favourite plant employed in borders as it ought to be. Being quite hardy the least possible amount of labour is needed in cultivation. For the sides of walks in partial shade, and especially in moist places, it is admirably adapted as a carpet plant, and it will fill the air with its refreshing perfume. It is one of the most popular of pot plants, and is equally at home in the cottage and conservatory. But cottagers and gardeners have not yet recognised its value as a border plant, or Musk beds would be as common as Mint beds.

In light dry soils and in hot situations, however, it does not flourish, but in strong and moist soil and in shady spots it luxuriates. Plant it in some damp nook where scarcely anything else will grow, or by the margin of the streamlet, and it will grow with a vigour that cannot be equalled by plants grown under glass. And how easily is it raised! A thousand plants can be had for sixpence with a little care in raising the seed.

The seed should be sown any time in the spring months. It will germinate at a low temperature such as a greenhouse or vinery affords, but a genial atmosphere is required to grow on the young seedlings. Where heat is sufficient the seed may be sown now and very strong plants will be had by May; but where artificial heat, say of 50°, is not provided for growing on the plants the sowing of the seed had better be deferred until February or March, when the natural and increasing heat of spring will make the greenhouse sufficiently warm for the young seedlings.

The seed is very small and requires a little careful treatment. The soil must be rich and very fine, and be thoroughly soaked before the seed is sown. Sow thinly, and lightly dust over it pure sand. Shade the pot or pan and place it in water, so that the soil is kept regularly moist without applying water to the surface. When the seedlings are large enough transplant them an inch or two apart in other pots or boxes, using rich soil, watering them copiously when established and growing, but until then somewhat moderately; yet they must never be dry. Gradually harden the plants off, and plant them out in May. It is only a question of room and boxes as to how many plants are raised, for few plants will grow more freely and satisfactorily. If showing signs of becoming drawn pinch out the tops. A cool frame after March is the best place to prepare the plants, the atmosphere of a house being frequently too dry.

When once established in the borders the Musk will push up each succeeding spring as thick as grass, and plants from a store bed may be drawn and transplanted like Cabbages in the months of April or May. Seed sown in the open ground will also germinate freely if the surface can be shaded and kept constantly moist.—AMATEUR.

CYCLAMEN SPECIES.

THE article of Mr. Robson (page 2) on the species of *Cyclamen* in ordinary cultivation opens up a subject which must be of interest to lovers of the plant. Without doubt there is some confusion in the names given to hardy sorts in gardens. The *C. europeum* of one is *hederifolia* of another, which latter name is given by Miss Annie Pratt as blooming from July to September; according to London it is a spring bloomer.

Are there really more hardy species in cultivation than *europeum* and *ecum*? *C. europeum*, both pink and white varieties, seeds freely here, and I fancy has the same tendency to sport as the varieties of *persicum*. The bed containing them is annually dressed with leaf mould, which facilitates the burying of the seeds by the contracting stalk, yet only a few seedlings come up annually. Last season I gathered part of the seed from which I have some scores of plants that are yet too young to decide whether the apparent serrate, crenate, and entire leaves will be permanent. There is certainly some variety in the older plants self-sown.

I know of no plant more worthy of extended cultivation than the hardy *Cyclamen*. A bed once seen in full bloom, especially

the later bloom after the leaves have begun to come up, is not easily forgotten.—R. O., *Castle Gardens, St. Fagan's*.

ROSES GRAFTED ON THE BRIAR'S ROOTS.

IN answer to the inquiry of "AN OLD SUBSCRIBER" for more information on this subject, I may remark that any of the Briars will answer except the Sweet Briar. As to thickness, I use both large and small roots if they have but one fibre on

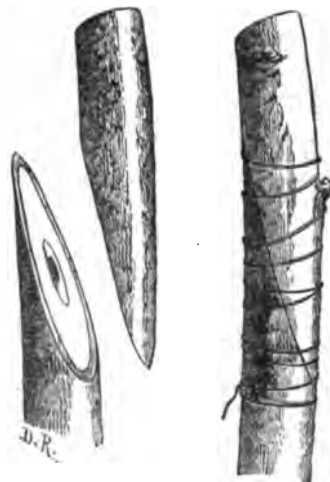


Fig. 13.

them. I cut them into convenient lengths. I like them best 5 or 6 inches long. The Rose shoots must be ripe and firm. The length is immaterial, but I generally have them the same length as the roots. If the root is a good one and strong I put on quite a strong branch. I sometimes use a piece of moss over the binding or a small portion of clay. If the Rose graft fits one side of the root that is all that is required. I use a small chisel to open the cut of large roots to insert the graft. If your correspondent will use a small tenon saw to cut the long roots into proper lengths he will find it much easier, as the Briar roots are very hard. Potting I think will not answer; the open ground is the best, planting firmly in fresh soil. A dung bed would root them quicker, but they suffer if not carefully hardened off. Whip grafting, as shown in figs. 13 and 14, also wedge grafting, figs. 15 and 16, may be

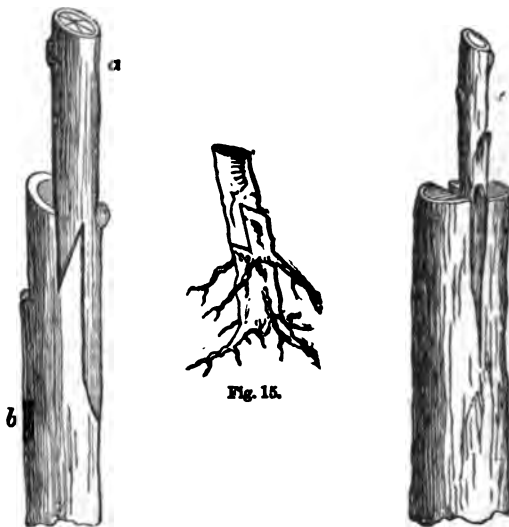


Fig. 14.

Fig. 15.

Fig. 16.

adopted as is most convenient, the stocks (b, fig. 14), being a portion of root having more or less of fibres attached, the scions (a) being well-ripened Rose shoots.—J. C.

"J. C." deserves the thanks of your readers for calling their

attention to this easy and certain mode of propagating Roses. I think however he is mistaken in supposing it has not been mentioned before, for I think this system of grafting Roses was alluded to by one of your late able coadjutors. I believe the late Mr. B. Fish, nearly twenty years ago, in giving a description of a garden he had visited, mentions a frameful of Roses grafted in this way. I regret not being able to name the place referred to or the exact date.

The talent of originating is not given to everyone, but all can imitate. I was then a young man, and since that time I have root-grafted not only Roses but a good many other plants that are somewhat difficult to propagate from cuttings. Amongst others I may name *Combretum purpureum*, *Ipomoea Horsfalliae*, and *Luculia gratissima*. Apples on the Paradise, Pears on the Quince, &c., may also be worked in this way if it is thought desirable.

In conclusion, I think this system of grafting has probably been known and practised many years—probably centuries, but men in those days were less communicative; and besides, there did not then exist, in the shape of an ably-managed "horticultural press," the means of disseminating useful information.—H.

YUCCAS.

For many reasons Yuccas claim special attention. They rank under the head of plants with striking and decided foliage, peculiar and characteristic, contrasting well with other forms of vegetation. They are hardy, evergreen, adapting themselves to many circumstances, situations, and localities, and are not fastidious for the most part as to soil. They flourish at the seaside, in the heart of towns, and in the country, in either exposed or sheltered situations, grouped or as specimens. As an edging or boundary mark they have their own peculiar beauty. It is seldom one sees more than a single plant of Yucca in the generality of gardens, and that not unfrequently in a border or shrubbery classed with evergreens and Conifers, about the only position they seem out of place, yielding a somewhat disjointed harsh appearance. Yuccas are a great additional beauty to rockeries. In connection with terraces and as single plants placed right and left of a promenade they yield a substantial effect. Exposed to the dust and smoke of towns their foliage can readily be sponged and thus be kept clean and healthy. They remind one somewhat of the more tender *Dracenas* and *Aloes*. By the way, there are several proofs that one or two of the *Dracenas* are hardy, which should be taken advantage of more frequently.

Yucca gloriosa can readily be recognised by its stiff, upright, and substantial foliage, which is always prepared to remind the intruder of its unflinching presence. This is a magnificent plant for isolation on lawns, &c., or when massed in an irregularly raised and formed bed.

Y. recurva.—Perhaps the most beautiful of all, as it combines the dignity of *Y. gloriosa* with the peculiar grace of its arched leaves. The foliage attaining age has a systematic, pendulous, and recurring habit, while its unmaturing growth stands erect. This is suitable to precisely the same appointments as the former species, with a still further extension of appropriateness to vases and the like.

Y. flaccida.—The principal attraction of this species is in its free-flowering propensity, and its adapting itself to almost all soils. The whole strength would seem as if centred in producing its most elegant and magnificent blossoms yearly, so much to be envied by *recurva* and *gloriosa*. The foliage of *Y. flaccida* has at all times a pitiable appearance, turned and twisted by every gust of wind. If hospitals were provided for sickly plants it might well be taken for an outdoor patient by those not conversant with its natural habit.

Y. filamentosa.—The chief drawback of this species is seemingly its daintiness as to soil. In the black sands of Surrey it is truly charming, and I question if it would not grow in many places where it is now not seen. The principal feature in this plant is the thread-like fringe that borders its leaves. The foliage though beautiful can scarcely compete with the more noble *Y. gloriosa* and *Y. recurva*; but here again its freely-produced flowers are compensatory. It is no uncommon occurrence for single plants to produce three or more spikes of blossom, and, moreover, they occasionally bloom as late as September and October. I have no doubt that the blooming season may be retarded by breaking-off the crown of the bud when it first shows itself; it thus produces blossoms on a short stalk, and tends to encourage another spike to be thrown-

up later in the season. However, this plan would only be desirable in limitation, as the striking beauty of the Yucca flower is in its predominance over its neighbours. This species I more especially suggest as an edging to walks and the like. I could speak enthusiastically on an effect thus attained under my direction, but I cannot bring to mind having seen it similarly brought to bear anywhere else.

I would urge the extended and more general growth of the Yucca, of which the foliage and flower at all times will not fail to yield due gratification, whilst its adaptability to circumstances claims for it a universal recommendation.—HENRY COOPER.

RANGEMORE HALL.—No. 1.

THE SEAT OF M. T. BASS, ESQ., M.P.

SOME of the gardens of England are remarkable for their ornamental features, for their picturesque sites, and for their elaborate and artistic treatment from an æsthetic point of view. Others are noted for their genuine gardening excellencies, their fruitfulness, and usefulness in supplying the household wants of their owners. In most gardens, however, these distinctive features are combined, one or the other predominating according to circumstances and special requirements. At Rangemore there is a blending of the useful and the ornamental, the former being in the ascendant, yet the operations are so extensive, the management so good and systematic, and the means so complete, that there is here, as in many other instances, "beauty in utility." Besides evidence of able supervision on the part of the gardener this good and well-appointed garden bears impress of the ownership of a gentleman liberal and with a disposition to do all that he undertakes in the most complete and thorough manner. Mr. Bass, therefore, in conducting his extensive establishment, has become a patron of horticulture by the comprehensive scale of his gardening operations and by the ungrudging means afforded to perfect the work in the several departments.

Rangemore is situated about five miles from Burton-on-Trent, on the high ground skirting Needwood Forest, which is the property of the Crown. The mansion is on Crown property, the appurtenances being on the estate of Mr. Bass. The edifice is very spacious and is an imposing structure, overlooking an undulated country of park-like scenery. The grounds, or the ornamental portion of them, are not extensive but are a skir, as it were, of the Crown property, which stretches away from the principal frontage.

The gardenesque element of Rangemore is, I understand, likely to be extended, for, notwithstanding the ownership of the soil, Mr. Bass is contemplating considerable alterations and improvements. Mr. Bass's ideas of beauty are not, however, shapen in hard, formal, and artificially curved lines. He cannot endure the mutilation of nature which is by some called artistic treatment, but he enjoys the simple easy freedom of irregular clumps of Hawthorn, semi-wild bowers of Honeysuckle, huge masses of the Dog Rose and Sweet Briar, and an intermingling of native trees and flowers. The natural graceful beauty of Rangemore must, in the spring, when the Thorns are adorned with their snowy flowers and the air is laden with the perfume of Roses and Honeysuckles, be extremely enjoyable, and likely to suggest regrets that our native trees and flowers are not more generally permitted to dispense their charms in their own effective manner.

A broad carriage drive leads to the mansion, skirted by a stately sweep of lawn, which is bounded by trees and shrubs, left, in a great measure, to their own natural habits to mingle together in a free and easy manner, which is appropriate to the nature of the place and its surroundings. Yet the grounds are not destitute of art, but its touches are very gentle. As will be seen by the accompanying plan there is a terrace walk along the principal front of the mansion which, at intervals, contains raised beds, supported by stonework and planted with flowers. Near the extremity of the walk is the flower garden, which fronts the conservatory, this structure being in connection with the mansion. The flower garden is not extensive, and is simple and graceful in design. It is intersected by gravel walks, and as standard Roses are employed in connection with the usual bedding plants the garden is sweet as well as gay. This design is figured as being adaptable to a large or small garden.

The garden is gay also in spring as well as summer, and is not barren and devoid of attraction in the winter. As soon as the summer plants are removed the beds are promptly filled

shrubs have a far more cheerful effect during the winter than has bare soil, however neatly it may be levelled, and however trimly the beds may be kept. Spring gardening is, unfortunately, too often only half done, and the system is condemned because it is not properly carried out. It should be done well or not at all, and it cannot be done well without a considerable expenditure of time, which can be ill afforded in a majority of gardens and with the staff of labour which owners only feel justified in providing. Spring gardening involves special and extra labour, and where this is not afforded it ought not to be expected to be carried out. At Rangmore it is done well, and the beds are as enjoyable in early spring as during the summer and autumn months.

The conservatory is spacious but not ornate. It is principally enjoyed by Mrs. Bass, who is, unfortunately, an invalid. It contains tree Ferns and the usual decorative plants, but it is principally noteworthy for the fine Camellias, which, without any forcing, commence flowering in October.

The grounds adjacent the conservatory are appropriately ornamental. The lawns contain a profusion of Rhododendrons with some admirable Conifers. Cupressus Lambertiana is especially noteworthy for its towering form; and Wellingtonias and Cedars of Lebanon, Cryptomerias, &c., are represented by fine healthy specimens. The grounds also contain choice deciduous trees, and some glimpses through this foliage of hill and dale, grass and water, are worthy of the artist's pencil.

From the mansion, and at a distance of about half a mile, is the handsome church, erected and endowed by Mr. Bass. The approach to this edifice is by an avenue of Wellingtonias and Cedars of Lebanon, which are planted in considerable numbers, and, although the soil is of a strong clayey nature, the specimens are in perfect health and colour, and especially where not exposed to a strong sweep of wind. When planted thinly, and in exposed positions, trees of this nature seldom progress favourably, let the soil be ever so well prepared, and it is always advisable to provide shelter by a close planting of free-growing trees as "nurses," and to be removed as their services can be dispensed with. By such aid choice and valuable trees will attain a greater size in ten years than they would in thirty years if planted unsheltered.

But while a great deal may be found to admire in the ornamental department of Rangmore, and much instruction be gathered, especially from its semi-natural features, yet it is the garden proper—the walled enclosures, and the work that is done in them, its extent and thoroughness—which are the most remarkable features of this fine place.

The walled gardens, which are on Mr. Bass's private estate, are six acres in extent, and contain glass structures of such size and numbers as are seldom seen in a private establishment. They consist of forty houses besides pits and frames, and an idea of their extent will be formed from the fact that they contain three miles and a half of hot-water pipes. These pipes are heated by three boilers at an annual cost for fuel of £700. The forcing of vegetables is carried on on an extensive scale. Seakale is provided in October; Asparagus in November, £70 worth of crowns being forced annually, the best being prepared in France and supplied by Messrs. Veitch & Sons; green Peas (a few) are had at Christmas, French Beans nearly always, also Mushrooms and salading.

Fruit is also extensively provided for Mr. Bass's English and Scotch establishments. The work of fruit-packing is of no trifling character, it not being unusual to send to Scotland 7 or 8 cwt. twice a week during the autumn months. This, after travelling five hundred miles by railway, fifty by water, and twenty-five by land, invariably reaches its destination in good condition. Grapes are packed in stout glazed brown paper, each bunch forming a cone; the bunches are packed with base and apex interfitting, and frequently arrive with little or no loss of bloom. This stout paper and wadding are the only materials used in packing. Boxes are made convenient for the different kinds of fruit, and these are placed in hampers, packed in dry leaves, so that injury by jolting and shaking is reduced to a minimum. The paper has a perfectly glazed and smooth surface, and is found to disfigure the Grapes less than any other kind of envelope.

The garden, or a great portion of it, is comparatively new, and one might fancy that the site had been chosen on the principle that as it would do for nothing else it might do for a garden. The ground is so irregular that it would be difficult, if not impossible, to have worked it by the plough; and the natural soil is of that hard, heavy, barren nature that Messrs. Luckhurst and Taylor have written about. If either of them

have a more ungenial staple than the soil at Rangmore they are sincerely to be pitied. But bad soil brings out good qualities, not of fruit and vegetables merely, but skill and energy on the part of the culturist. The soil is here so inert, and worse than inert, that sites for fruit borders have to be excavated and made entirely of new soil. Even Asparagus will not grow unless the beds are made entirely of new soil, for the natural soil when in contact with the shoots causes them to rot off as if poisoned. A soil of this nature can only be made fertile by a considerable outlay of capital and skill. Fire is the only real renovator, and fire has been here applied. It is a matter of manuring the ground with coals, and is expensive, but it is really the most economical mode of treatment. By burning, and persevering work, many crops now grow luxuriantly which otherwise would not grow at all. As an instance of the extreme irregularity of the ground and the soft and unstable nature of the soil, the foundation of the garden walls where they crossed the hollows had to be put in 15 feet deep. Difficulties have, however, only been regarded as "things to be overcome," and the lofty and substantial walls are firm, and are being rapidly clothed with trees. The condition of the soil is totally changed, and is profitable, and the extensive glass structures are not in better condition than are their contents—the Vines, Pines, Peaches, &c., and plants. But as has been said, the whole of the fruit borders have been made of new soil; and when we look at their extent both under glass and in the open garden, and are informed that the soil has been brought from a distance of five to six miles, we in some degree realise the stupendous nature of the work, and cannot but be surprised at the present completeness of the gardens and of the general excellence of their many productions.

It is not possible, neither is it necessary, to particularise the condition and contents of every house, for 100 yards of Peach houses are only the counterpart of another; I shall, therefore, in my next communication only notice in a general way a few prominent features of the place, pausing at anything which is worthy of mention, and especially as affording a measure of instruction.—J. W.

HOW NEAR TOGETHER SHOULD THE RASPBERRY BE PLANTED?

ALL writers, I think, give 8 by 8 feet as the proper distance. Visiting plantations this past summer, I found one where the plants were in rows of 8 feet apart, but were from 16 to 18 inches apart only in the row. The grower only permitted one cane to fruit, while one cane only was grown for fruit of the coming season. He certainly had the largest and finest berries that I saw anywhere of the same variety, the Franconia, and he told me that his expense of picking was less than when grown three or four stems to hill, with as many more of canes for next year, and the extra price for these large berries more than balanced the account. His practice is to pinch the top of the young cane of this season when about 1 foot high, then again when it had made a growth of 6 inches, then again at 6 inches, until it is 3 feet high. His pinching-back was an easy and quick job, and left the stems with lateral leaves resembling little trees, and they stood so firm that no wires or stakes were needed.—F. B. E.—(*Boston Cultivator*.)

[It would be well for this experiment to be tried on a small scale to test its value in this country; we have not before heard of the practice of "summer pinching" having been applied to the Raspberry.—Eds.]

THE HOLLY.

[This is the conclusion of Mr. J. Kentish's communication commenced in our last number.]

THE Greeks named Holly *Agria*—that is, ferocious, on account of its prickly leaves. The Romans similarly called it *Aquifolium*, from *acutum*, sharp, and *folium*, a leaf. Bæthin first named it *Ilex* on account of the resemblance of its leaves to those of the Quercus *Ilex*, the true *Ilex* of Virgil. Linnaeus adopted the name of *Ilex* for the genus, and preserved the name of *Aquifolium* for the most anciently known species. The name Holly is probably a corruption of the word "holy," as Turner in his "Herbal" calls it Holy and Holy Tree, probably from its being used as a decoration at the holy time of Christmas, not only in houses but in churches. The German name *Christdorn*, the Danish name *Christorn*, and the Swedish name *Christorn*, seem to justify this conjecture. I have also

found the reference to the Holy Bush and Yew speaking of Christmas times; beside, also, it used to be spelt "Holy" years back. In England Holly also bears the names of Hulver, Hulvere, and Holme.

Dr. Prior says, "Holly or Holm is on the eastern border called Hollen, the old form of the word, and that from which *holm* has been formed by the change of *n* to *m*, as Lime from Line; A.S. *hollen* or *holegn*, a word derived from L. *Ulex*, which in the middle ages was confused with *Ilex*, the Holm Oak of the ancients, whence the adjective *uigna*, and with the prefixed aspirate, *huligna* and *holegn*. The form *Holly* will have been the more readily adopted, from the branches of this shrub being used for Olive branches, and strewed before the image of Jesus, in certain solemnities of the Church that represented His entrance into Jerusalem. Thus in Googe's *Naogeorgus*—

"He is even the same that, long ago,
While in the streets He rode,
The people mette, and Olive bowes
So thick before Him strode."

Hulver is a corruption of the French for Olive, *Olivier*.

There are several distinct varieties, and very many shades of each variety. The following are some of the kinds of common Holly—Narrow-leaved, Broad-leaved, the High-Clere, the Thick-margin-leaved, the Laurel-leaved, the Oiliated-leaved, the Smaller, the Recurved, the Serrated, the Curled, the Pierce or Ferociously-spined-leaved, the Thick-leaved, the Aged or Spineless, the Variegated-leaved, the White-edged-leaved, the Gold-edged-leaved, the White-spotted-leaved or Milkmaid Holly, the Gold-spotted, the Silver-blotched Hedgehog, the Gold-blotched Hedgehog, the Yellow-fruited, and the Gold-fruited. The largest Hollies in Kent, Buckingham, and Surrey grow in loam on chalk. Holly likes a free loamy soil, and attains its largest height in rich sandy loam.

The Holly tree has been admired from the earliest periods. In former times it was largely grown for hedges. Evelyn's Holly hedge at Saye's Court, Deptford, 400 feet long, 9 feet high, 5 feet in diameter, has been celebrated ever since the time of Bay—i.e., about two hundred years ago. There are also some hedges in France over two hundred years old. Evelyn observes, "I have seen hedges, or, if you will, stout walls of Holly, 20 feet in height kept upright, and the gilded sort budded low, and in two or three places one above another, shorn and fashioned into columns and pilasters architecturally shaped, and at due distance; than which nothing can be more pleasant, the berry adorning the intercolumniations with scarlet festoons and encasps." There are several noted Holly hedges in Scotland. The only objection to Holly as a hedge is its slow growth. When obtained it is the best hedge and the least expensive to maintain.

The wood of the Holly has peculiar properties. It is white, except in the centre of old trunks, there brown. It is very useful in joining, cabinet-making and turning, mathematical instrument making, wood-engraving, for whip handles and walking sticks, also for veneering; and though the wood is naturally so white, when dyed it makes a good substitute for ebony. It is not grown enough to make it much used as a veneer. As in Mistletoe, the bark affords birdlime. The decoction of the bark has been used to calm a cough. The berries are purgative, six or eight cause violent vomiting. Though the birds, especially the thrush and blackbird, feed on them they are considered poisonous to men.

The custom of placing evergreens in places of worship prevailed before the introduction of Christianity, and in proof of which reference is made to texts of Scripture, particularly in Isaiah and Nehemiah, as having reference to it; but the evergreens originally made use of were the branches of the Pine, Fir, Cedar, and sprigs of Box. Holly appears to have been first used for this purpose by the early Christians at Rome and was probably adopted for decorating the churches at Christmas, because Holly was used in the great saturnalia which occurred at that period; and it was the policy of the early fathers of the Church to assimilate the festivals of the pagans and Christians as closely as could be permitted in their outward forms. It was customary among the ancient Romans to send boughs of Holly during even the saturnalia, as emblematical of good wishes, with the gifts they presented to their friends at that season, and the Holly became then to be considered as an emblem of peace and good will. It was for this reason, independently of any wish to conciliate the pagans, well adapted to be an emblem of the principal festival of Christianity, which inculcates peace and good will to man.

Whatever may be the origin of the practice, it appears to be of very great antiquity. In England perhaps the earliest record of this custom is in a carol in praise of the Holly written about four hundred years ago, in the reign of Henry VI. Stowe in his "Survey of London," published in 1598, says that in his time every man's house, the parish churches, the corners of the streets, conduits, market cross, &c., were decorated with Holme [Holly], Ivy, and Bays at Christmas.

The Holly is of long duration, as we read of a tree in Tuscum 80 feet in circumference, with ten branches of such magnitude that each might pass for a tree. This single tree alone resembles a wood. Cole, in his "Paradise of Plants," says he knew a similar tree. The owner cut it down and caused it to be sawn into boards, and made himself thereof a coffin, and left enough to make his wife one too, both parties being very corpulent. There are Hollies in Frenham in Surrey some 60 feet high. Evelyn mentions some large Hollies near his place at Wootton in Surrey, in the neighbourhood of which was once a fort called Holmsdale Castle, from, as he supposes, the number of Holmes or Hollies which once grew there. The names of Holmsdale, Holmwood, and Holme Castle occur in various parts of Scotland, and are generally supposed to have been applied in consequence of the abundance of Holly at these places at the time they were named. In 1862 Mr. Mayhew made a calculation that about 50,000 bunches of Holly and 50,000 of Mistletoe were sold in London every season; and that £200 worth of Holly was required only for the sprigs to be stuck in the puddings in the metropolis.

COVERING VINE BORDERS.

AFTER what has been written on this subject most cultivators will doubtless prefer having the roots of the Vines producing late-keeping Grapes in inside borders; and if the roots or a portion of them are outside, they will feel safer if the surfaces of such borders can be protected from heavy rains in the autumn and winter. That an influx of moisture to Grapes after they have ripened is detrimental to their keeping is pretty generally admitted; but much, as Mr. Taylor has reminded us, depends on the temperature and atmosphere of the house, and Mr. Walker adds very convincing evidence of the importance of this point. He has told us of his failure to preserve Grapes where the border was covered with glass, when he was compelled to have damp soil turned up in the house.

There is little doubt that a dry border and a damp atmosphere is more prejudicial to the keeping of Grapes than is a wet border with a dry atmosphere. We seldom find Black Hamburg Grapes hang better than those in orchard houses where the Vines are trained very thinly and where a constant circulation of air is afforded, not for the Vines but for the trees. Very commonly in such houses do Black Hamburgs hang plump and fresh until January: an advantage to their thin training and full light and air-exposure is that the Vines are generally planted inside and trained up the pillars.

That Grapes have frequently been preserved until the present time, when the borders have not been covered, is undeniable, and "W. E." has quoted a case in point where the house in addition to the Vines contained plants which had to be watered occasionally. I have preserved Grapes under similar circumstances by bestowing great care on the temperature and ventilation, but I found the work much more easy after I obtained shutters for the borders.

That heavy autumnal rains facilitate the decay of Grapes I found out by accident. The down pipe conducting the water from the vinery became obstructed, and before it could be rectified the border near it became thoroughly saturated, and the Grapes on the three Vines which were so much soaked decayed much more rapidly than those on the other Vines in the same house.

I have found too that when shutters are provided they should, if much rain fall, be used early in the autumn, and not withheld until the Vines have cast their foliage. With heavy autumnal rains, when the foliage of the Vines is more or less in an active state, much more water is conveyed to the fruit than by a similar weight of rain after the foliage has fallen. Indeed I am not certain that the Grapes which are cut and the stems inserted in bottles of water do not receive as much moisture as do those on Vines in uncovered borders and after the foliage has fallen.

During late years I have covered my borders early—that is, considerably before the Vines have cast their foliage, and have

found the advantage of so doing by the better keeping of the Grapes. I have indeed, for the purpose of experiment, partially covered a border, leaving the other part exposed, and found the covering decidedly beneficial.

Previous to placing on the shutters I have been careful to note that the border was not dry, for to cover up a border in a dry state and to keep it dry for six to seven months is to injure the constitution of the Vines. Mr. Walker with his glass coverings appears to be specially careful on this point, and finds it necessary to water the borders periodically before finally removing the lights which shelter them.

The soaked Vines referred to as injuring the keeping properties of the Grapes did not injure the Vines, for I was surprised to find them in the following season producing the finest Grapes in the house. Coverings, therefore, while being useful must not be abused; their employment must be governed by the rainfall, the drainage, and the retentive or percolative nature of the soil—or, in other words, I attach more importance to the intelligence and sound judgment of the man than to the mere rain-proof nature of the covers.

Just as the keeping properties of Cherries and Gooseberries are impaired by heavy rains in summer, so are Grapes injured by heavy rains in autumn—that is, when the Vines are in full leaf, and summoning the roots to send them up all the water they can absorb. I therefore cover according to circumstances, sometimes in September and at other times not until November, and the covers have decidedly afforded me great assistance in prolonging and preserving late-hanging Grapes.

As to the nature of the skins of the Grapes influencing their keeping, my experience is in favour of a well-finished skin. What I mean is, that berries deficient in colour have thinner skins than those which are well-coloured, and the latter keep the best. I have occasionally cropped the Vines under my charge very heavily—too heavily, as some uncoloured bunches have proved. These have had thin skins and would not keep. As a rule, the lighter Vines are cropped the stouter is the foliage and also the skins of the fruit; and I have found such fruit on such lightly cropped Vines to keep the best.

I observed also that the thin-skinned Gooseberries during the deluge of last summer were the first to decay; the thicker-skinned varieties alone surviving the watery ordeal to which the crop was subjected, and in some districts almost totally destroyed.

Lightly cropped Vines, well-skinned bunches, and fully-coloured berries I prefer for late-hanging Grapes; and sheltering the borders as soon as heavy rains fall in the autumn, and paying due regard to the temperature and atmosphere of the house, are, I consider, important items leading to success.—A NORTHERN GARDENER.

NEW BOOK.

Potatoes: or How to Grow One Thousand Pounds of Potatoes from One Pound of Seed. By JAMES PINK. London: William Ridgway, 169, Piccadilly.

[THE following review of this sensational pamphlet is from the pen of an experienced Potato-cultivator, and one whom we know has no prejudices against new vegetables as such, of which proof is afforded by the tone of his article on "Peas New and Old," which we published last week.]

THIS is a pamphlet of seventeen pages of widely printed matter. In half a dozen of these pages the author describes the mode of culture which he adopted in raising a trifle over two-thirds of the standard weight from 1 lb. of seed (diseased tubers not being weighed), the remaining pages being devoted to a recapitulation of the conditions of Messrs. Hooper & Co. in offering certain prizes, a commentary on the proceedings in connection with that Anglo-American enterprise, a little philosophy, and some sentences of complaint in the "interests of truth" and for the "benefit of horticulture."

The object of the author is avowedly remonstrative, for he states that he "had not the remotest idea" of writing the pamphlet until "discredit was thrown on the successful competitors by the *Gardeners' Chronicle*" in the following report:—"We should not be surprised if the course taken by the Judges does not lead to a considerable amount of discontent; but for the present, at all events, has closed one of the greatest horticultural farces ever put before the public, and it is difficult to perceive how, by any possible means, this competition can ever be of any benefit to horticulture." Now, as to the "dis-

credit," that clearly refers to the scheme, and not to the men who carried it out; as to the predicted "discontent," the pamphlet proves its existence, while it fails to prove that the competition will or can "benefit horticulture."

In the "interests of truth" we may give Mr. Pink the fullest credit for the legitimate way which he carried out his experiments. We accept his weights to the last ounce, and recognise his cultural skill in producing his sensational crop. He reveals a good knowledge of Potato culture by deeply working the ground and adding to it the following manures:—"Ten bushels of wood ashes, ten bushels of leaf mould, one bushel of soot, 4 lbs. of sulphate of ammonia, 6 lbs. of sulphate of soda, 10 lbs. of nitrate of soda, and 10 lbs. of sulphate of potash," to eight and a half perches of ground, further dressing with "50 lbs. of superphosphate of lime previous to the final earthing-up of the plants."

The pound of Snowflake was cut into eighty-two sets, and Eureka into 121 sets, a further pound of Brownlee's Beauty being cut into forty-three sets to occupy the remainder of the ground. The sets were planted on April 3rd in drills 3 feet apart, and the same distance between the sets. On August 6th the crop was taken up, the Eureka produce weighing 672 lbs.; Snowflake, 405 lbs.; and Brownlee's Beauty, 290 lbs. The 3 lbs. of seed thus yielding, not 3000 lbs., but 1367 lbs. of produce, or, including the diseased tubers, the average may be put as half the standard weight, or 500 lbs. per 1 lb. of seed.

Twenty sets of the latter sort were planted on inverted flower-pots (24's) sunk at the requisite depth, as an experiment in drainage, and these produced half a pound per hill more than those planted in the ordinary way.

Now, in the "interests of truth" all this may be at once accepted as correct. As a curiosity it is novel, but as a crop of Potatoes it is easy to prove that it is of no real "benefit to horticulture," because practically it is not a large but, considering the high culture of the ground, really a small crop, and for any real benefit that it can confer (except to those immediately interested) it is practically worthless, and adds nothing whatever to the cause of "the food supply of the country."

This is an important matter, and must not be treated in a superficial manner. "Anything" it has been said (but not in the pamphlet), "can be proved by figures," but figures are sometimes fallacious. Let us see where they lead us in Mr. Pink's own example of practice.

By sinking flower pots he obtained an increase of half a pound per root. According to that, if the plan had been carried out throughout the ground, Eureka would have produced 730 lbs. instead of 672 lbs., and the aggregate bulk would have been nearly 1500 lbs. instead of 1123 lbs. But let us go further. If Eureka had been so planted to the extent of an acre the pots would have increased the value of the crop at 3s. 6d. per pound (the selling price of the tubers) by £420. The pots could be delivered on the ground at 8d. each, and they could be planted for 1d. each. At the rate of increase and price quoted each pot would leave a profit of 1s. 9d., and would bring up the crop of Eureka to a value of upwards of £4000 per acre. All that on paper looks wonderfully like benefiting horticulture, but in practice there would be slight drawbacks; the value of the produce would not (happily) be sustained, and perhaps every pot would not bring its additional half pound. At any rate, advantageous and profitable as the pot plan and eye subdivision of Eureka at 3s. 6d. per lb. may appear by rules of arithmetic, not many cultivators will adopt it in producing crops for the markets, and the experiment remains empty—a novelty conferring no benefit, and viewing it in regard to the "food supply," it would make that food terribly "dear meat."

In seeking to prove the great public value of the system detailed in the pamphlet, the author takes his stand on the old aphorism of "making two blades of grass grow where only one grew before," and hence he concludes that "the competitors have done good service to horticulture." Let us test the soundness of this premise. The "two blade theory," like other two-edged blades, cuts both ways. Before the grass can be beneficial it must possess the quality of being "good to eat." Most dwellers in the country have seen two, and many more than two, blades of grass grow where only one grew before, and they have also seen the cattle avoid these rank knolls which have been scattered over the pastures, even when the animals have been starving for want. Where that is seen it is regarded by the agriculturist as the result of neglect, and betokens bad management, because the elements of the

soil and manure are wasted, and the additional grass represents loss instead of profit.

Now, not one word is said in the pamphlet on the good quality of the American Potatoes, and, for aught that is said to the contrary they may be "Boss Tweeds," and have taken more than they gave; but the author does state that he grew "forty sorts," and that "Eureka was the first to be affected by the disease (on July 21st), and next Snowflake, and then Brownell's Beauty." That is not a satisfactory result, for if two Potatoes have been made to grow where only one grew before, the increase is a loss, and not a gain, unless the produce be sound and of good quality.

The value of the varieties are assessed according to their number of eyes, Eureka heading the list with 121 eyes. But is that any real gain? Is it not rather a substantial loss? The superiority of a tuber is generally expressed as having "few eyes;" but here for the first time in Potato history "many" eyes becomes a virtue. It is a virtue, however, that ordinary observers and impartial judges—those whose first study is the interest of the community—will not and cannot recognise, and hence the unanimous verdict of the visitors in regard to the many-eyed monsters exhibited at South Kensington—a verdict which may be truthfully entered in three words—words that were repeated again and again throughout the corridor—"Fit for pigs."

The double-produce theory thus falls in the essential point which could give it value; but it fails also irrespective of any conditions, for in the experiments recorded two Potatoes have not been made to grow where only one could be before produced, as hundreds of cultivators know, and all may prove during the ensuing season.

At the given rate of produce the weight per acre would be under 12 tons. Why, that is not at all an uncommon weight, and is in fact frequently equalled in the Potato-growing districts of Lincolnshire and Yorkshire in field culture under simple plough tillage.

But let us take a parallel case. We take the produce as stated as averaging nearly 6 lbs. per hill (square yard); the cost of the seed being 10s. 6d. Now take an equal number of sound sets of Victorias, Regents, or Dalmahoyas. These at an average weight of 2 ozs. each may be purchased for 1s. 6d. Prepare them well, and plant in similar ground, similarly manured, and the crop, instead of being 6 lbs. per square yard "fit for pigs," will be at the least 12 lbs. per square yard, and fit for princes. Which mode confers the greatest "benefit to horticulture," and does most for the "food supply of the country?" In the one case we have a greater amount of valuable produce at small cost; in the other a lesser amount of questionable produce at great cost.

The Potato is a staple article of food, and the question of its supply and improvement must be subservient to ordinary requirements and in accordance with the ordinary and most economical modes of production. If it cannot stand this test a new introduction is only an innovation—a novelty, and not an improvement of real worth and national value.

If Mr. Pink's pamphlet is productive of good, it will be by stimulating inquiry and in fostering deeper thought amongst cultivators as to how they can best, and in the most practical manner, produce the greatest supply of superior produce at the least cost. That will not be by performing a surgical operation on the eyes of Eureka.

But, it may be urged that all new Potatoes must have a trial. True: the Americans have had a trial, and what is the result? Let those who have to purchase in the markets of cities and towns answer. Is the standard of quality improved in the greengrocers' shops? Is the supply in London better than it was ten years ago? nay, is it not worse? Are there no "Early Roses" sold to the multitude as "Flukes," and at Fluke prices? When an affirmative reply must be given to the latter questions, and a negative to the former, then the improvements have shown themselves in a singular manner, and after a period of trial has been sufficient to create an effect.

It is unfortunately pretty clear that the foreign novelties have been over-estimated. They are for "show" rather than for real service, and it is not a "benefit to horticulture" to exalt them above their sphere and to impart to them a value that they do not possess.

Managers of Potato shows, and the judges of those shows, need to exercise great discrimination, or they will fail in their purpose of improving the Potato. That is their aim, and it is a laudable one; but at all great Potato gatherings prizes are

awarded to dishes that would not be permissible on a gentleman's table. The prizes may be given to the "best" in the classes, but that best represents too often a low type of quality. That many new sorts are imposing in appearance is willingly admitted, and that others are good is not disputed, and especially those of our countryman Mr. Fenn. The cultivation of new sorts gives pleasure, and the exhibiting of the tubers affords an enjoyable field day to the growers and the public; but exhibitions can only be made instructive by special care and discrimination, lest a fictitious value be given under the stamp of authority to sorts that cannot eventually serve any useful purpose.

As to offering prizes of the nature of those championed by Mr. Pink in his pamphlet, they can no more "benefit horticulture" than would prizes for the greatest weight of Cabbages from an ounce of seed, where Robinson's Champion Cattle Cabbage would inevitably triumph, while Early York and other small sorts of superior quality would have to hide their "diminished heads," and be dishonoured.

In conclusion, let it be noted that this has, like the pamphlet which suggested it, been written solely in the "interests of truth" and for the "benefit of horticulture."

NOTES ON VILLA AND SUBURBAN GARDENING.

FORCING SALADS.—The increasing demand for the different kinds of salad plants at all seasons of the year is one of my reasons for making a few remarks upon some of the best and most convenient modes of raising them for use; and the next is, that as in most instances the more substantial ingredients of the salad bowl which are grown in summer, such as Lettuces and the different sorts of Endive, will by this time be nearly exhausted, that it is time to think of supplying their place with others in a forced state. I will therefore begin with

Chicory.—This is a root much like a Carrot in shape, and should be grown in rich ground in summer, taken up in autumn, and stored up in a similar manner to other roots; but the crowns ought not to be cut off so closely as to interfere with their growth, as it is from these that the produce comes when forced. For forcing the roots may be planted in soil on a bed of heating material, also in any heated house or frame; or for an amateur perhaps the most convenient way would be to pot a few roots, say a dozen in each pot, and place them in the forcing house, turning another pot over this to keep them dark, which in all cases must be done in order to have the leaves properly blanched. One inexpensive mode is, when a good heap of leaves can be brought together, to dig a space sufficiently large, in the middle of it put some soil in, and when the heat is rising moderately plant the roots. Bank up the leaves high enough on each side to support a covering—this may be a thatched hurdle—and afterwards covered with leaves or rough litter to keep the heat in. Than this there is no better plan for raising Chicory. Violent heat is to be guarded against, for this root is easily excited into growth. Next in popularity are

Radishes.—These require heat if wanted early, but they also need light and to be grown near the glass. It is not, however, necessary to make up a bed specially for them, as they being soon over may be grown with other crops, such as Early Horn Carrots, Potatoes, or even with Asparagus; when these crops are planted sow the Radish seed among them and lightly cover it; the Radishes are soon up, and with a little care are quickly in for use. Wood's Early Frame, the French Breakfast, and Oval-shaped Scarlet are desirable sorts; the scarlet and white Turnip Radishes may also be relied upon. If a large and constant supply of Radishes is required it will be necessary to make beds on purpose for them at this early season.

Lettuces.—Though these are not generally forced they are so very important in a salad that it is necessary to take every possible means to obtain them at all seasons. I am now using Wheeler's Tom Thumb, a Cabbage Lettuce, and the Siberian Cos, which were sown late and have been planted out under temporary covering and protected from frost, and a frameful of Bath Cos is in store for succession. To succeed these another crop must be sown under protection as soon as possible. The shelter afforded by a cold frame is all that is required. The plants must be grown thinly and advanced steadily, or they run up so delicate as not to produce hearts and are therefore worthless; and again, in every garden there ought to be a store planted out under walls. I always make it a practice of raising a good number of plants of the small Cabbage kind, and I have always proved them useful.

Mustard and Cress is ever in demand, because if not generally employed in salads it is used by itself. It can be raised in nearly any place where there is a temperature above 40°. The seeds should be sown regularly over the surfaces of shallow boxes or pans, and then pressed into the soil by some flat instrument and not covered, but be kept watered; the seeds soon germinate even in a dark place, when the pans can be brought

to the light, and in a week or two their produce will be fit to eat.—T. RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

Owing to the severe frost and snow it has not been possible to do any out-of-door work, but the men have been cutting out some of the short branchlets to which we have previously alluded, to support the Strawberries when ripe. They are tied up in bundles, and placed in a dry place to be ready for use when required.

In the gardens of amateur fruit-growers of small means, who do their own gardening or who cannot afford the expense of a skilled gardener, a frequent blemish is to be found in the unskillful management of the fruit trees on the garden walls. One finds a few of all sorts of fruit trees, but none of them giving any real satisfaction. The worst managed of all are the Peaches and Nectarines. The walls are generally from 6 to 9 feet in height, and the trees are trained so that not more, perhaps, than one-third of the wall is covered with bearing wood.

Now unless the amateur has plenty of spare time and is an enthusiast in fruit culture he ought not to grow Peach and Nectarine trees. They are the most difficult to manage of all, principally because of their liability to be attacked by insect pests. As soon as the leaf buds open in early spring they are attacked by the Peach aphid, which very soon spreads over the trees and causes the leaves to curl; the experienced cultivator will destroy this insect pest before the leaves are injured, by careful washing with soft soap dissolved in weak tobacco water. I have seen Peach trees so badly attacked with aphids that not only was the crop of fruit spoiled for that season but also for the next, and the trees so much injured that it would require several seasons of the best management to restore them to good condition. If the trees escape the attacks of aphids in the spring they are very likely to fall a prey to red spider in the autumn. This pest will begin its attacks as soon as the hot weather sets in. It is easily detected by the appearance of the leaves, which show a lighter green in blotches on the upper surface from the spider sucking the juices from the under sides. Spider may be kept in check by the trees being syringed freely once or twice a-day in hot dry weather. All this is well understood by the trained gardener, but the amateur has not often the time to spare, nor does he care for so much syringing. Plum and Cherry trees also suffer from insects peculiar to the different trees, but they are usually free from red spider, and are also much more hardy than Peach trees.

The most useful hardy fruit for an amateur's garden is the Pear, not because the fruit is of more value than Plums or Cherries, but because a succession can be had from July until March or April. The Pear is also equally well adapted for low or high walls. The best form to train the trees is the horizontal, and when the walls are of brick the work of training is very simple. Let us take a tree one year old. It has one strong single growth: this is cut back to 14 inches from the surface of the ground. When the tree starts in the spring train one growth perpendicularly, and one on each side in a horizontal direction a foot from the ground. If the centre growth is strong it may be stopped at 9 inches, when three growths are again selected and trained as the others. We have sometimes had three pairs of horizontal growths in one season by pinching the centre growth. A course of bricks is 8 inches, so that if the growths are trained at every third course they will be 9 inches apart, which is a good distance. This is the best method to fill the wall with bearing wood, and the trees can be pruned by anyone with ordinary judgment. The branches will soon become studded with fruitful spurs, and their production must be encouraged by pinching back closely the young growths in summer. As the trees become old the spurs stand out a great distance from the wall, and the trees sometimes become too crowded with them. It is bad management to allow this. If the spurs are cut back to within an inch of the main stem they will start again and new spurs will be formed. If they are too thick, cut the branch on which the spurs are close back to the main stem. On our Pear wall we have planted at the middle of the space between each tree a single upright cord; these are all well studded with fruit buds from the base to the summit.

Apricots are the next best trees for an amateur to plant, and they must be trained on the fan system. The trees are not subject to insect attacks, but branches die off in a mysterious manner sometimes.

Some of the finer Apples may be grown, and ought to be trained like the Pear trees. The old Golden Pippin is greatly improved by wall culture, and the Newtown Pippin, Ribston, &c., are all worthy of walls.

FRUIT AND FORCING HOUSES.

Vinerias.—The early houses are starting but slowly this season. One reason may be that the sun is not seen for days together, and the temperature by day is not much different from

what it is by night; we fancy that the mild autumn had also something to do with it. The Vines lost their leaves towards the end of summer, and the natural consequence of this is to cause the buds to start, and just in proportion as the buds are started so is it difficult to start the Vines the following season. Of course, it is only the buds towards the extremities of the lateral growths that begin to move in the autumn; the buds at the base do not start, but it is quite certain that they are very considerably weakened by the others beginning to grow at the wrong season.

Many Grape-growers must be in the same plight this season. One grower stated at an exhibition in the first week in July that his Vines had not a leaf on them at that time, and he had just out splendid fruit from the Vines, to which was awarded a first prize.

If we are to have good Grapes, with perfect bloom, the Vines must not be syringed, and if the fruit is to be kept free from rust it is not safe to apply sulphur to the hot-water pipes. If, therefore, red spider appears what is to be done? The pest unchecked will destroy the leaves, and if this is continued unchecked for a series of years the speedy decline of the Vines must be reckoned upon. We do all that can be done at present by careful attention as to ventilation, moisture in the atmosphere charged with ammonia, &c. to prevent the appearance of spider. If it does appear on the Vines it is destroyed or kept in check by fumes of sulphur from the hot-water pipes.

In a few days all that is left of the late Grapes will be out. The bunches with the laterals attached will be placed in the fruit-room; the end of the branch will be inserted in water. The Vines will be pruned and the houses washed as well as the Vines, as has been already directed in the "Doings." The walls are washed with lime water, to which is added a pound of flowers of sulphur to a pailful of "wash."

Peach House.—Those who have trees in flower in the early house must see that the house is judiciously ventilated, and the flowers must be artificially set. The best way is to pass a small camel-hair brush over the flowers. It is tedious work to go over a large house this way, but two or three of the best blooms on a branch may be done. When the trees have been partially gone over they may be gently shaken, which will disperse the pollen on such flowers as have not been touched with the brush. The trees must not be syringed while in flower, but the paths and borders may be sprinkled every morning. Syringing the trees may be continued as soon as the flowering period is over. 55° is the proper night temperature during the flowering period.

The borders of later houses that are ready to be started should be first well watered and the house kept close for the first week, no more fire heat being required than will keep out the frost. The second week raise the temperature to 40° at night, syringing the trees every morning. Peach trees in pots require but little attention at present. It is necessary to look over them once a-week, watering such as require it.

Strawberry pots on shelves in the orchard house are also watered once a-week, and as soon as the plants show signs of growth they will have an occasional watering with weak liquid manure.

Melon House.—To have ripe Melons about the end of May or early in June the seeds may now be sown in a little bottom heat. Sow in loam with a little leaf mould. The compost should be moderately moist, as it is better not to water the seeds or young seedlings before they are potted-off. The plants will be ready for potting-off as soon as the seed leaves are fully developed. At this season the stalks become drawn up, perhaps 2 inches in length, before the plants are potted. All this stalk must be covered in potting, so that the mould comes up nearly to the seed leaves. The young plants will do better on shelves near the glass than in bottom heat at a considerable distance from the light.

GREENHOUSE AND CONSERVATORY.

Little has been done in this department except to remove decaying leaves and flowers. These are always unsightly, and if allowed to remain they spread disease and decay to the healthy tissues. A few spots of mildew appeared on some of the summer-flowering Heaths and other hardwooded New Holland plants; the diseased portions were at once dusted with flowers of sulphur.

Cyclamens are very much subject to mould on the flower stalks, which causes them to decay. It is best to look over the plants frequently, as decay spreads very rapidly, and much damage is done if there is any neglect.

Roses have been placed in a house to force with a temperature of 55° and a little bottom heat. Roses are easily forced if the plants are kept near the glass and free from insect pests. On the first appearance of green fly the house must be fumigated.

Hyacinths and Tulips in pots never do first-rate if the plants are not kept near the glass when they are in the forcing house. After the plants are placed in the greenhouse it is not material where they are placed.

It has been very unfavourable weather for stage and fancy Pelargoniums. We keep them near the glass and water very

cautiously. The pots must not become dusty dry, else the plants will lose a number of leaves. If too much water is applied the growths become weak. We keep the house as cool as possible, and ventilate freely on every favourable occasion.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

BRISTOL (Spring Show). March 22nd and 23rd. Mr. G. Webley, Holm Wood, Westbury-upon-Trym, Hon. Sec.
ROYAL CALDERDALE HORTICULTURAL SOCIETY. Shows April 5th, July 5th, and September 18th.
WESTMINSTER AQUARIUM. April 15th and 18th, May 10th and 11th, May 30th and 31st, July 5th and 6th, October 4th and 5th.
MAIDSTONE (Roses). June 21st. Mr. Hubert Bansted, Rockstow, Maidstone, Sec.
SPALDING. June 21st. Mr. G. Kingston, Sec.
RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.
SOUTHPORT. July 6th, 7th, and 8th. Mr. E. Martin, Sec.
HELENSBURGH (Roses). July 15th and 18th. Mr. J. Mitchell, Sec.
BRIGHOUSE. July 29th. Messrs. C. Jessop & E. Rawnaley, Hon. Secs.
DUNDEE (International). September 7th, 8th, and 9th. Mr. W. R. McKelvie, 26, Enslid Crescent, Sec.

TRADE CATALOGUES RECEIVED.

W. Outbush & Sons, Highgate, London, N.—*Catalogue of Select Vegetable, Flower, and Farm Seeds.*

John Jeffries & Sons, Cirencester.—*Garden Guide and General Seed Catalogue.*

Drummond Brothers, 52, George Street, Edinburgh.—*Catalogue of Vegetable and Flower Seeds, List of Gladioli.*

W. Barron & Sons, Elvaston Nurseries, Borrowash, Derby.—*Descriptive Catalogue of Choice Vegetables, Agricultural, and Flower Seeds.*

William Rumsey, Joynings Nurseries, Waltham Cross, London, N.—*Catalogue of Garden and Farm Seeds, Potatoes, &c.*

James W. Macokey, 40, Westmoreland Street, Dublin.—*Illustrated Amateurs' Guide and Descriptive Seed Catalogue.*

William Rollisson & Sons, Tooting, London.—*General Seed Catalogue, also a List of Subtropical Plants.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

BOOKS (*A Constant Reader*).—"London's Encyclopedia of Plants" contains woodcuts of stove and greenhouse plants. With its supplement it includes plants of 1855. Price 28 18s. 6d.

TRANSPLANTING HORNS (*F. M. B.*).—The plants for ornamental purposes may be safely moved any time from November to March, not permitting the roots to become dried by exposure.

AUSTRALIAN PLANTS (*J. E. E.*).—You had better consult Dr. Hooker's "Flora of Australia," and Benthams' "Flora Australiensis."

DESTROYING SCALE (*E. W., Dublin*).—The easiest, and we think the most effectual, plan to destroy the scale on your large tree will be to syringe it thoroughly with soft-soap water of a strength of 3 or 4 oss. of soap to each gallon of water, applying it at a temperature of 140° when it reaches the insects. You must calculate that the solution will be considerably cooled in its transit through the air.

GREENHOUSE CONSTRUCTION (*D. E. Conway*).—We do not know where you can obtain instruction. If you inspected one and a frame such as you need they would afford you the best guides.

GENERA ZEBRINA (*A Subscriber*).—We should shift the plants which are now 8 inches high into larger pots early in February, and grow-on in brick moist heat, affording them a position near the glass. The temperature should be 60° to 65° by day from fire heat, and 10° to 15° higher from sun, and at night 55° to 60°. Water moderately. They will, if strong, flower in spring. After flowering the plants should be gradually dried off, affording them a light airy position. Our plants are now in flower in a cool stove, the flowers at this season being very bright and useful. The pots containing the tubers are always placed on a moist bottom, water being withheld when at rest, but the pots are sprinkled overhead daily in sprinkling other plants, and when commencing growth the tubers are fresh potted. They are kept constantly in the stove, starting of their own accord about July, and invariably flower in December and January.

GRASS ON TERRACES (*A Constant Subscriber*).—Between now and March dress with any rich compost you may have at hand, as the refuse of the garden reduced to mould, or nearly so, adding to and mixing with it or other compost a sixth part of lime, turning over the compost and adding the lime in its unslacked state, which will become slacked in the compost, and before applying the heap should be again turned over. Apply about half an inch thick, and in April remove the rough parts of the compost by raking with an iron rake, and sow over the whole evenly 8 lbs. of *Cynosurus cristatus*, 6 lbs. of *Festuca duriuscula*, 8 lbs. of *Festuca tenuifolia*, 4 lbs. of *Poa nemoralis*, and 4 lbs. of *Trifolium minus*, in mixture for one acre, taking a proportionate part of each kind for the size of your ground, raking lightly after sowing, and rolling well, the surface being in such a state as not to adhere to the roller, and leave for a month, after which mow and roll frequently.

VINE NOT GROWING (*Somerset*).—We cannot account for the Vine not

growing more in a season than 8 inches, other than that it is constitutionally weak, and will never do any good. We should remove it and replace it by the cane to which you allude, cutting it to within 8 feet of the bottom of the wire, leaving that extent of cane for bearing.

EVERLASTING FLOWER (*O. W. D.*).—It is an *Helichrysum*, but which, in the absence of foliage, we are unable to tell. You do not state whether the species is annual or perennial, hardy or tender, so that we are unable to advise you as to its treatment. The other plant we do not know, nor are the leaves any help as they were smashed.

PRUNING ORANGE TREES (*A. D.*).—When the trees are much crowded with wood, having a quantity of worn-out twiggy growth, it is desirable to thin those annually, cutting out the weakest and oldest wood, but avoiding what would be termed a severe pruning, as that would tend to an excess of growth and a deficiency of flowers and fruit. Any irregularities of growth should be cut-in so as to induce compact heads. The pruning should be performed prior to growth or flowering, the early part of February being a good time.

CACTUS NOT FLOWERING (*J. of Sidmouth*).—Repot the plant in March in a compost of three parts turfy loam and one part each of broken bricks of a porous nature, old cow dung, and silver sand, draining well, and place in a house with a temperature of 55° at night (or ainery started in that month will answer well) and 65° by day, with a rise from sun heat to 75° to 85°, watering moderately, and sprinkling overhead twice daily, avoiding a sodden state of the soil, but watering copiously when in free growth. The growth being complete, or in July, place outdoors in front of a south wall, placing the pot on a slate, and water only to keep the shoots or growth from shrivelling. Return to the house by the middle of September, placing in a greenhouse in a light airy position, giving no more water than that required to keep the growths plump, for which very little will be required. After that preparatory treatment your plant will flower.

NAMES OF FRUITS (*L. L.*).—1, Dumelow's Seedling; 2, Brabant Bellefleur; 3, Yorkshire Greeting; 4, Not known; 5, London or Five-crowned Pippin; 6, Fear's Pippin. (*H. H.*).—Flemish Bon Chrétien, a stewing Pear. (*Stuart and Meis*).—Gloria Mundi. (*Connaught Subscriber*).—They must all be local varieties, for we cannot distinguish any of them. (*Sir W. Bagge*).—Fadley's Pippin.

NAMES OF PLANTS (*P. P.*).—The specimen was smashed. You should send a specimen in flower enclosed in a box.

POULTRY, BEE, AND PIGEON CHRONICLE.

SILKIES.

BY REGINALD S. S. WOODGATE.

PART I.

Of all the different varieties that are now found at our poultry shows, the Silky is certainly one of the quaintest. We notice at exhibitions that very many visitors are struck by these birds, and many are the queries we hear as to the name of this pretty little breed. We find Silkies now are in great request, not, of course, for their laying powers or for table purposes—though the former are by no means inconsiderable—but as sitters and mothers. Undoubtedly no breed supplies such exemplary sitters and nurses as do Silkies. Their great mass of silky-down feathering, their peculiar attention to their chickens, and the long time they run with their broods, make them more especially valuable for rearing early chickens of all breeds, and Bantams and Pheasants at all times. Silkies, too, are great winter layers, and generally in January and February, when broody hens are not procurable, Silkies will be found ready to undertake the business.

It seems the fashion in the present day to breed them small for the exhibition pen; in fact, some think the smaller the better. But much as we admire the tiny specimens, we hope they will not become mere Bantams, for then they would lose half their value as sitters, being only able to cover a very limited number of eggs. On the other hand, the long-legged and coarsely-made birds which are sometimes seen are simply hideous, and have at some time or other been the result of a cross we feel sure. This can generally be recognised by the appearance of single combs, red combs and faces, green or yellow legs, and birds which continually throw four-clawed chickens. We know that some say birds are found in Japan with these disqualifications, and are imported into England, and so trust to the genuine article. This is no proof at all, for surely the birds are capable of being crossed, and are crossed as much in Japan as anywhere else, and that these mongrel specimens certified as being found in Japan and imported into England and elsewhere are the result of some cross there is not much doubt. We have gone thoroughly into the matter, and have waited to write these chapters until we could procure the fullest evidence from Japanese merchants and others who have lived and are living in Japan, and from them we learn that the Japanese Silky pure and proper is just such as we see in the most perfect specimens of the present day. We could quote many cases of birds perfect in every one of our now required scale of points coming from Japan into England within the past eighteen months, and we know on two occasions Mr. O. E. Cresswell has himself come into possession of birds direct from Japan which have won in England in the severest competition. We quite believe that there is a red and single-combed bird with Silky plumage found in some parts of India, but there is no authorized proof, we believe, of these having been imported

into England; and from gentlemen who have seen them there and who knew what they were saying, we learn that they very much differ from the cross-bred and single-combed Silky as found in Great Britain.

Writing, however, on the question of crosses with this breed, we can thoroughly recommend for sitting purposes a cross between a Silky cock or cockerel and Game hens. No doubt a Silky cross with other breeds would make a useful race of sitters, but of the result of the Game cross we can speak with certainty. The chickens from them would be active well-made pullets as large as a Game hen with thick warm plumage. They would cover nine or eleven eggs of the larger breeds, and would be remarkable for their close attention to their eggs and care of their chickens. In these days when broody hens are scarce, it is worth while knowing what will make a good cross for incubating purposes, as Dorkings, Cochins, or Brahmas, pure bred or crossed, are generally too heavy and lumpy to perform this duty well. We recommend this cross to those who want something larger than a Silky generally is; but those who are content with a hen that will cover six or seven large eggs, or only want them to rear Bantams and Pheasants, there is no bird in existence to equal a pure-bred Silky hen for the purpose. We speak from experience, for during the past five years we have used them extensively, and have recommended them to friends, who one and all report the same satisfactory results.

Silkie, too, have other great features for making them popular. So many people in the suburbs of the large towns who like a few fresh eggs, and can only spare a modest portion of their little gardens, do not know what breed to keep. They want some variety which is ornamental and yet useful, but especially which will bear confinement well. Silkies are the birds for them: they do well in a tiny pen, are very hardy, small feeders, and fair layers of moderately-sized eggs, about halfway between a Bantam and a Hamburg. As for hardiness nothing surpasses them. With ordinary feeding and care they do admirably, and though in the last five or six years we have reared close on two hundred of them, we have never had one die from illness. They do not seem to mind wet or cold, and yet ours have had the rudest, roughest sort of protection. The warm silky down seems to protect them and impart much more warmth than ordinary feathering, and hence, of course, their great value for rearing early broods and delicate chickens.

For table purposes they perhaps are objectionable, but then only because of the colour of their skin and bones. Once got over this and they make as delicious eating as any other chickens. We have known them served-up with a thick white sauce, when the contrast is striking between it and the colour of their skin, and they so make a peculiar and ornamental dish. In crossing Silkies, however, breeders must be careful not to have any of the blood into their yards for rearing table birds, as in the second generation the skin will be an ugly and dusky colour, and it is impossible to make such look well on the table whether boiled or roasted. Care must consequently be taken to keep isolated the birds penned for producing table chickens.

The eggs of Silkies are sometimes a pale pink, sometimes a pale buff, and often nearly white. The hens often do not lay more than ten or twelve eggs before desiring to sit, but if not allowed to perform this duty they will generally lay again in a week. Their shells are very brittle, and will break very quickly. We know of no eggs which want so much moisture while the process of incubation is going on, for their shells are liable to become quite dry and brittle, when they will about the nineteenth or twentieth day entirely crack and peel off, leaving the chicken merely in the skin of the shell, which must, of course, be crushed by the other eggs or the feet of the hen. A damp place or a sprinkling of warm water every three or four days will, however, entirely do away with this difficulty.

Silkies are too often liable to elephantiasis or scaly legs. This is generally at first brought on by damp, but if not checked at once it rapidly spreads and grows into large lumps all up the legs, totally destroying the leg-feathering. In this stage it is infectious, and often when once it is rooted among the birds is very difficult to eradicate. At the first symptoms, which can always be discovered by the back of the legs looking as if dusted with flour or some white powder, then it is best to steep the legs in warm water, and then apply compound sulphur ointment, which will generally nip the disease in its infancy. When steeping the legs, however, care must be taken, as the action of the hot water on the delicate leg-feathering will sometimes cause the whole or greater part of it to fall out rapidly, leaving the legs nearly bare.

REIGATE SHOW OF POULTRY, &c.

"Tis an ill wind that blows nobody any good." The Reigate Agricultural Society after having collected their subscriptions, and that, too, from those who subscribed on account of the poultry classes, determined at a late date to strike poultry out of their prize list. As the sequel proved, this was the best thing they could have done for the fanciers of Surrey, because it

left them free to act on their own account without fear of treading on the toes of others, and with a substantial grievance to spur them on in getting up a show for their feathered favourites, in which no bucolic grumblings might be heard of money diverted from beef, and mutton, and pork, and wasted on a "parcel of useless feathers."

The Rev. J. P. Wright of St. Luke's Parsonage, and his plucky fellow-workers, deserve the thanks of all the fanciers of the county for having made the most of their opportunity. Though, as might be expected in a first attempt, there were many things which should, and doubtless will be, altered for the better another year. The arrangements before and during the Show were on the whole most satisfactory. The Exhibition was very good in quantity and quality. Every attention was paid to the wants of the birds; and every facility offered to the visitors, more of whom might have taken advantage of the return tickets issued by the S.E.R. Co. at single fares; the attendance on the first day being rather meagre.

We have before called attention to the want of management at the close of many shows, and the delay in the dispatch of birds from thence. From some shows, though distant many miles from home, our birds always return in good time and together, even when they have to be handed over from one railway company to another in the course of their journey, as is the case unfortunately with most exhibitions to which we send. We wish we could say this of all of them. Swindon was a shocking delinquent. The Show closed on the Friday; our birds reached home more dead than alive from cold and want at 8.30 p.m. on the following Monday evening. On inquiry we discovered that they had been dispatched from Swindon station at 2.20 a.m. on Sunday. A lame excuse was pleaded that the dogs gave so much trouble, &c. We do not intend to exhibit again at these mixed-medley shows, where cats and dogs call off the attention of all concerned. By the way, Mr. Swindon Secretary, we are looking forward with an eager and curious longing to the arrival by post of the illuminated prize card for which you deducted that shilling. We should much prefer the shilling; but we will not grumble if you will send us a good shilling's worth, and ask the post office if they will be so kind as not to stamp it very hard, or the general effect may be spoiled.

At Reigate we have the same cause of complaint. We do not exactly know whether the fault lies with the Committee or with the portly old gentleman who holds the reins of power at Reigate station. It may be six of one and half a dozen of the other. If the reckoning be by the baker's dozen we should credit the half dozen to the latter, whom we can now picture to ourselves pursuing "the even tenor of his way" unruffled by the cackling, and crowing, and cooing of prisoners impatient to reach their homes and liberty.

The Show closed on Thursday, January 6th. We not unreasonably expected that we should find our birds at a station on the same line of railway not twenty miles from Reigate on the evening of Friday the 7th. We were very much out in our reckoning. Hampers kept dropping in while we waited, one or two at a time (most of them should have gone elsewhere); but ours, oh! where were they? One hamper in particular we spotted and pounced on, it was so like ours; but to our chagrin we found that it was mis-sent, and belonged to a brother fancier in a distant county. With the consent of the railway officials we regaled the birds with sopped bread, meanwhile devoutly hoping that the lines of our birds had fallen in equally pleasant places. By the last train one of our Hampers arrived. Readers, pity the sorrows of a country parson! We had to face the keen east wind of that Friday night for seven miles on a slippery road, and that one of the most exposed roads in the county, without our most valuable specimens. These we sent for next day; they reached home on Saturday afternoon at about 8.30 p.m. That home is less than twenty miles from Reigate. We ask show committees, Do you think that exhibitors will endure this nuisance long? We have made a resolution never to send a second time to shows from which our birds return irregularly. We are disposed to make every allowance possible; but the unnecessary trouble, annoyance, and expense we have experienced on this score during the past season have almost determined us to give up exhibiting altogether. We ask all true fanciers to join with us in the same resolution, and to adhere to it. Then, perhaps, when entries fall off, committees will of sheer necessity be compelled to understand that they are bound to make arrangements among themselves and with the railways for the speedy dispatch of birds to their homes at the close of their shows. They are very careful about the arrivals, why not equally so about the departure of the specimens entrusted to their care? That great suffering must be caused by the present negligence must be apparent enough. Three days' confinement in a hamper without food or water, as in the Swindon case, is more than the constitution even of a Brahma will stand with impunity; so we find to our cost.—SURREY PARSON.

BOURNEMOUTH SHOW.—There are nine silver cups, and the money prizes good. The show includes poultry, Pigeons, and

cage birds. The classes are well separated, but Bantams require some explanation, for classes 23 and 24 as now worded are the same.

BURSLEM EXHIBITION OF POULTRY, &c.

The third Exhibition was held in the Town Hall and Covered Market on Wednesday and Thursday 12th and 13th inst.

Spanish were a fair lot, as also the Coloured *Dorkings*. The winners in both classes of *Cochins* unusually good; the first in Buffs a grand Golden pair, the Partridge large and well shown. Dark *Brahmas* were very good; and while pencilling was only noticed, the grand points of shape and style were not overlooked. Light *Brahmas* were good, but not equal to the Dark. *Polands* only four entries, but about the best class in the Show, and the extra awarded to the Silvers. *French* a good class, La Flèche first, and Crêves second and third. *Game* may be passed over as a section which was pretty large, but only the noticed birds at all to our mind; the extra going to a Black-breasted Red cock which combined proportion with style and handling, and not as many of the present-day winners, with legs too long, narrow shoulders, heavy sterns, and large feet. *Hamburghs* were very good as a lot, the contest running very close with the Duke of Sutherland and Mr. Beldon. A splendid pair of Gold-spangles was awarded the special. In the Variety class were Malays, Sultans, *Cochins*, and *Hamburghs*. In *Bantams*, *Game*, the extra was won by a handsome pair of Black Reds. The third in this class contained a grand old cock in *Game* points, but not well matched with a hen. In the next class the first went to Duckwings in the catalogue at the low price of £2 5s., but very readily claimed. The second Piles were a good lot, but somewhat overshown. In the variety class of Bantams first were a fine pen of Black, as also the third, the second being very good Whites. *Ducks* and *Geese* were such a show as is but rarely seen, scarcely one pen being bad. It would be a breach of faithfulness on our part if we did not notice an occurrence which took place here. In the variety class of Ducks was an alleged new variety. We make no comment.

Pigeons were a very small show, but the Hall a grand place for the purpose, and with so good a list we certainly expected to find a large lot. The quality was, however, good, and the local birds came well to the front in both poultry and Pigeons.

In *Rabbits*, for which small provision was made, were some good ones in Lops; but about one of the best in the Show was a Tortoiseshell Dutch in the Variety class.

SPANISH.—J. J. Powell, Bradford. 2, T. W. Jones, Wellington. 3, S. L. Edwards, Ceatbrook. **DORKINGS.**—Coloured.—1 and 2, J. Walker, Rochdale. 3, J. White, Northallerton. Any other variety.—1, W. Rowe, jun., Newark. 2, J. Walker, S. L. Wren, Leicester. **COCHINS.**—Cinnamon and Buff.—1, J. Walker, 2, H. Tomlinson, Birmingham. 3, W. H. Crabtree, Levenshulme, Manchester. Any other variety.—1, H. Tomlinson, 2, W. H. Crabtree, 3, W. Whitworth, jun., Manchester. **BAHMAS.**—Dark.—1, Newman & Danby, Wolverhampton. 2, J. Walker, 3, E. Pritchard, Tettenhall, Wolverhampton. **Light.**—1, M. Leno, Dunstable. 2, H. Beldon, Bingley. 3, T. A. Dean, Hereford. **POLANDS.**—1, H. Beldon, 2, A. W. H. Silvester, Sheffield. 3, G. W. Boothby, Louth. **FRENCH.**—1, E. Walton, Rawtenstall, Manchester. 2, W. H. Crabtree, 3, W. Whitworth, jun., *Game.*—Black-breasted Red.—Cock.—1 and 3, Duke of Sutherland. 2, J. Mason, Worcester. Duck.—1, H. Beldon, 2, T. Cooper, Whaleybridge. 3, J. R. Pratt, Stoke-on-Trent. **Brown Red.**—Cock.—1, W. & H. Adams, Burslem. 2, Sadler & Watson, Wrenbury. 3, H. Beldon. *Hen.*—1, Sadler & Watson. 2, J. and E. Prince, Nantwich. 3, T. Burgess, Salop. Any variety.—1, W. & H. Adams, 2, Duke of Sutherland. 3, G. Lunt, Market Drayton. **HAMBURGHS.**—Black.—1, Duke of Sutherland. 2, H. Beldon. 3, Rev. W. Serjeantson, Acton Burnell Rectory, Shrewsbury. **Golden-spangled.**—1 and 3, H. Beldon. 2, Duke of Sutherland. **Silver-spangled.**—1, H. Beldon. 2, Duke of Sutherland. **Golden-pencilled.**—1, Duke of Sutherland. 2 and 3, H. Beldon. **Silver-pencilled.**—1 and 3, H. Beldon. 2, Duke of Sutherland. **ANY VARIETY.**—1, J. F. Walton, Manchester. 2, H. Beldon. 3, W. & H. Adams. **BANTAMS.**—*Game.*—Black-breasted Red.—1, E. Walton. 2, E. W. Ardagh, Worcester. 3, E. Bell, Burton-on-Trent. Any other variety.—1, J. Goulding, Bowden. 2, R. Brownlie, Townsend. 3, E. Walton. **Black or White.**—Clean legged.—1, J. Walker. 2, H. Beldon. 3, W. H. Shackleton, Bradford. Any other variety.—1 and 2, J. W. Lloyd, Kingston. 3, M. Leno. **SELLING CLASS.**—1, J. Walker. 2, J. Dykes, Stapley. 3, F. Jagger, Baildon. 4, S. Ford.

DUCKS.—Rouen.—1 and 3, J. Walker. 2, Duke of Sutherland. **White Aylesbury.**—1 and 3, J. Walker. 2, J. Hedges, Aylesbury. Any other variety.—1, A. and W. H. Silvester, 2, J. Walker, 3, M. Leno. **SELLING CLASS.**—Drake.—1 and 3, J. Walker. 2, Duke of Sutherland. *Pair.*—1, Duke of Sutherland. 2, J. Walker. 3, J. Hedges. **GESE.**—1 and 2, J. Walker. 3, W. E. Burrows, Derby. **TURKEYS.**—1, W. Wykes, Hincley. 2 and 3, J. Walker.

LOCAL CLASSES.—*Spanish, Dorkings, Cochins, Brahmas, French, and Game.*—1, S. Hemmings, 2, C. Heath, 3, F. Cooper. *Hamburghs.*—1, J. Turner, 2, Mrs. Flynn, 3, T. Boulton. *Bantams.*—1, T. Fowles, 2, A. Heath, 3, W. Blakeman.

PIGEONS.—*Carriers, Black, or Cock or Hen.*—1, T. M. Usher, Walsall. 2, J. Walker. Any other colour, Cock or Hen.—1 and 2, J. Walker. *Pouters.*—1, H. Pratt, Hampton-in-Arden. 2, H. Yardley, Birmingham. *Fantails.*—1 and 2, Rev. W. Serjeantson. *Runts.*—1 and 2, H. Yardley. *Tumblers, Almond.*—1, W. and H. Adams. 2, H. Yardley. Any other variety.—1, H. Yardley. 2, W. and H. Adams. *Long-faced, Balda, or Beards.*—1, R. H. Unsworth, Stockport. 2, J. Brown, Manchester. *Jacobins.*—1, J. Thompson, Bingley. 2, H. Yardley. *Barbs.*—1 and 2, H. Yardley. *Dragoons, Blue.*—1, R. Woods, Mansfield. 2, G. S. Prentis, Cirencester. Any other variety.—1, R. Woods. 2, G. S. Prentis. *Antwerps.*—1, J. J. Bradley, Birmingham. 2, H. Yardley. *English Gulls.*—1, T. M. Usher. 2, R. H. Unsworth. Any variety.—1, H. Yardley. 2, J. F. Phelps, Ross. *Selling Class.*—1, J. Walker, Smallthorne. 2, C. Norman.

LOCAL CLASSES.—*Carriers.*—1, J. Walker. 2, R. Hart. *Dragoons.*—1, E. J. Rowley. 2, J. Walker, 3, E. J. Rowley. *Pigeons.*—1, H. W. Nixon. 2, J. Norris. Any variety.—1, A. J. Ridgway. 2, W. Tomkinson.

CAGE BIRDS.—*Belgians, Any other variety.*—1 and 2, H. Davies, Wolverhampton. 3, S. Bunting, Derby. *Norwich, Clear Yellow.*—1, 2, and 3, J. Athersuch, Coventry. *Clear Buff.*—1, J. Adams, Coventry. 2 and 3, J. Athersuch. *Variegated.*—1, J. Adams. 2 and 3, J. Athersuch. *Crested.*—1, J. J. Yallop, Northwich. 2, G. E. Russell, Brierley Hill. *Lizards, Golden-spangled.*—1, Cleminson and Elliott, Darlington. 2, S. Bunting. 3, J. Athersuch. *Silver-spangled.*—1, P. Duckworth, Macclesfield. 2, J. Stevens, Middlesbrough. 3, S. Bunting. *Broken Cap, &c.*—1 and 3, S. Bunting. 2, W. & H. Shackleton, Rochdale. *Coppys, Yellow or Buff.*—1, J. Yallop. 2, W. & H. Shackleton. 3, C. Johnson.

Macclesfield. Plain Heads.—1, J. Yallop. 2, W. & H. Shackleton. 3, C. Johnson. Any other variety.—1, 2, and 3, J. Adams. *Goldfinch, Yellow or Buff.*—1 and 2, S. Bunting. 3, J. Stevens. *Dark Goldfinch or Linnet.*—1 and 2, S. Bunting. 3, G. B. Russell. *Goldfinches.*—1, E. & R. Ward, Derby. 2, S. Bunting. 3, J. Athersuch. *Linnet.*—1, W. H. Hatchelor, Whitley. 2, W. Carleik, Middlesbrough. 3, R. Pearson, Whitley. **Foreign Birds.**—1, S. Bunting.

LOCAL CLASSES.—*Males, Yellow.*—1, J. Wright. 2, J. W. Nicklin. 3 and medal, T. Lowades. *Buff.*—1, 2, and medal, J. W. Nicklin. *Norwich, Yellow.*—1, 2, and medal, J. W. Nicklin. *Buff.*—1, 2, and 3, J. W. Nicklin. *Parrots.*—1, J. W. Wilson. **RABBITS.**—*Lop-eared.*—1, H. W. Whittles, Leek. 2, C. Hansell, Longton. 3, T. Brown, Leek. Any variety.—1, J. Owen, Kettering. 2, R. H. Swain, Heywood. 3, W. H. Critchlow.

JUDGES.—*Poultry and Rabbits:* Mr. E. Hutton. *Pigeons:* Mr. G. C. Holt, Mr. H. Allsop. *Caged Birds:* Mr. G. J. Barnesby.

ST. AUSTELL POULTRY SHOW.

EVERY year we find this little Exhibition in a more thriving state. Really the quality of the birds, the management, and general arrangements are very good indeed. We believe at the bottom of their success may be traced the fact that so many of their Committee are genuine fanciers themselves. The Rev. G. F. Hodson awarded the prizes, and in most cases gave great satisfaction. The catalogues with awards were posted by an early post, and we believe every prizewinner had sent them gratis the day after the Exhibition an illuminated prize card.

Dorkings came first on the list, and to the Coloured went the cup for the first section, and perhaps quite deservedly, for the cock is a good bird and of grand colour. Second and third were fair pens. The other Dorking class only mustered five entries where Silver-Grays were first, and Whites second and third, the latter rather small and too much like *Hamburghs*. *Cochins* had two classes; in the one Buffs and Whites competing, in the other Partridges had it all to themselves, the poor Blacks having to take refuge under the covering of the variety class. In the first class Whites won first, and we have not seen such a bird as the cock in this pen was for a long time. He is quite faultless but for his comb being a little rough. The hen with him was also very good. Second went to nice Buffs of pretty colour, and third again to Whites, where the cock was a good bird. In Partridges the winners were all good and well selected; the first and second being well ahead. *Brahmas* were better in numbers than in quality. Among them there were not many worthy of notice save the winners. The hen in the first-prize pen of Lights was good and well shown. Mrs. Holmes also sent a nice pen, which were highly commended. *French* made a fair muster; Crêves came in second between two pens of Houdans, the first of which were decidedly good and neatly marked. *Game* were very good; they always are here, for some good fanciers live in the neighbourhood. They had three classes and a cup, which fell to the Brown Reds. Both these classes were fine, but we fancied all the birds were rather out of bloom; perhaps the late weather has had some effect upon them. In the other *Game* class all the prizes went to Duckwings, a fair lot of birds; 121 (Feast) middling Piles. *Spanish* made nine pens; all the prizes went to Bristol. The birds were mostly chickens and well shown, the pullet in the first-prize pen being remarkably good, and with a good-faced cockerel. *Polands* only made five pens, but the quality was admirable. White-crested Blacks again scored another triumph against the Silvers. The winning pair were beautiful; 133 (Lecher) another good pair of the same colour, but younger. Both the Silvers were, however, good; the second cock especially heavy in crest. *Hamburghs* were a very fair collection. The cup went to Silver-spangles. We thought the winners were well chosen. After them Gold-pencils were the best, the Silvers only making up four pens, where the winners were fair birds. *Malays* and *Indian Game* were classed together; Malays, however, won all the prizes, and a good lot of birds they were. The breed is another of those which have made great progress of late, and now wants help from the exhibitions to push the breed yet more. Some so-called Indian Game came in for high commendations, but we heard others say there was not a bird in the class with pure Indian blood in its body. The Variety class was very pretty, and some good Silksies won first, Black *Hamburghs* taking the other two prizes. *Game Bantams* were only middling, all the birds seeming to be coarse and large. The next class was very beautiful and remarkable for many pens of admirably Laced birds; a neat pair of Blacks came in, however, between them. *Minorcas* made fifteen pens, of which the majority were again Black. They seem to be another breed which is quite shaking itself down into an established place. We liked all the winners, and thought other prizes could well have been given had there been any more to allot. In single cocks a White *Cochin* was first, a nice Brown Red *Game* cockerel second, and a Dark *Brahma* third. The Sale classes were large, and many very fair birds were to be picked up. *Rouen Ducks* were a nice lot, and so were the *Aylesburies*. *Geese* and *Turkeys* only made five pens together. The winners were, however, good, and were worthy of their prizes, though they won them so easily.

In *Pigeons* Carriers made a good class. In *Pouters* a good

wherever honey can be gathered, let those who want large harvests of it keep hives of great powers and capacities.—A. PATTINGRAW.

EXTRACTED HONEY VERSUS COMB HONEY.

RESUMING the subject of my last communication on this point, I may take it for granted that all bee-keepers are agreed as to the superiority of honey in the comb to that which is extracted from the comb by whatever process, and that our efforts should be mainly confined to the production of the largest quantity of the purest honeycomb in saleable form.

A letter forwarded to me from your office, approving of my remarks on this subject, asks for information as to the shape and size of boxes. At this moment my eye is resting on a description with figures of the "American International Hive," as patented and sold by H. A. King & Co., New York. It contains thirty-two honey boxes, some of which are arranged over the hive, and the rest are piled up at each side, having communication by means of holes with the hive itself. Rejecting twenty-four of these small boxes—those I mean which are adapted to the sides—there remain eight resting on the top board. Each of these eight boxes is large enough to contain two thick combs 5 inches high and 6 inches long. I further observe that each box is constructed as a frame, having glass in front and at the sides. Nothing can be imagined neater or more handy and attractive. When filled with honeycomb these boxes would command purchasers anywhere, and create a market at once wherever offered for sale. Methinks, however, they are too small for our needs in this country. In my former paper I recommended four boxes instead, which, of course, would hold double the quantity of honey; but a size between would perhaps be most suitable. This would give room for six such boxes of very convenient size. The communication between these boxes and the hive below should be by narrow passages, just wide enough to allow free movement to the worker bees, and to them alone. In bar-and-frame hives they can be made exactly to correspond with the spaces between the combs below, which, of course, is a matter of importance.

I am trying to obtain a sample hive from New York complete for trial next summer; but any person with ordinary mechanical powers and a few tools could construct his own boxes, or have them constructed by any carpenter, quite sufficiently perfect for his purpose. I am well aware there is nothing new in this management, but it seems to me that for many years our great bee-keepers have been going on a different track, following the craving of the public at honey shows for something striking and grand. It now appears by general complaint that the huge supers which it has been the fashion to procure, never mind at what cost of honesty and straightforward dealing, are not paying. So after all "honesty is the best policy." It cannot be amiss, therefore, to lead our friends back into better ways among the good old paths, and certain I am that none will regret adopting a system of honey-getting which in the long run will be found to be the most profitable.

It is curious that Mr. Hunter and I should have read so differently the voices from America on the subject of the "extractor" and run honey; but no doubt there are different voices, and he and I are both right in our different views of the matter. It may be that in some parts of the great western land run honey and the extractor are popular. There is something charming to the ear, if not to the sight, to hear of 1541 lbs. being taken from five boxes, and again of "500 lbs. of comb honey and 185 gallons extracted from forty-four stocks." &c. But from other parts of the country come voices telling equally of quantity but lamenting the quality, and crying especially over the glut in the market which has supervened. I say, Let us go in for quantity if you like, but let us look mainly to the quality of our honey, for quantity, if of inferior food, soon falls on the appetite and damages the market; but honeycomb of excellent quality is like those more delicate sweetmeats whose enjoyment only creates a healthier appetite for them, and consequently increases their sale year by year. *Sat verbum sapienti.*—B. & W.

OUR LETTER BOX.

SAWDUST FOR FOWLS (T. W. E.).—The objection to sawdust is that it is an indigestible substance, that it fills up the space that should be occupied by nourishing food, and that it is not capable of being ground in the gizzard. Another objection is that it remains unchanged, causing great discomfort, and inducing excessive drinking. There is little to condemn in its use if it is only for the purpose of cleanliness in a house, but it is very injurious where the food is thrown down on it and the birds pick it up with their food. This is especially the case at exhibitions. It is only where it is unavoidable that the fowls swallow it. Instinct is strong in them, and forbids them to pick up anything so injurious. It is as good for human beings as for fowls.

CANARY HEN PICKING HERSELF (M. S.).—Your Canary, although apparently healthy, may be uneasy and suffering from a heated state of the blood through being kept in a warm room, or she may, perchance, be troubled with parasites, which to an unpractised eye would not be noticeable. The parasites are of the bag species, diminutive in size, but vary in colour according to age. This kind of vermin accumulates very fast during the Canary breeding season, and are troublesome customers to get rid of. The annoying nature of the red

mites, as they are called, cause birds to peck themselves much, especially during night-time, when the bugs leave their haunts to feed upon the life blood of the birds. In day-time the vermin mostly keep to their haunts—the crevices of the cage—and it is there they may be found. In the first place wash the bird well with soap and lukewarm water, using a partly worn-out shaving brush for the purpose, or a piece of old flannel. Don't be afraid of applying soap pretty freely to purify its feathers during washing. Rinse afterwards in clean warm water. Extract or dab out as much of the moisture as you can from the feathers with a muslin or cambric cloth, and then let the bird gradually dry in a cage before the fire. When sufficiently dry remove it to another cage, and scald and cleanse that you have removed the bird from. If after the operation of washing you find the bird continues to peck itself, dose it with a drop of castor oil, after which let it have betwixt the wires of the cage a piece of salt (no sugar, please), which will act as a blood-purifier. Supply a bath daily; and as early in approaching spring as you perceive the dandelion root shooting forth its head in sheltered situations let your bird have some to eat. The mixture of the four kinds of seeds you name will be best for the bird; only in the place of the rape, which probably you may not have scalded, and which may be of the large black kind, substitute it for that known as summer rape, or otherwise in its place supply small hempseed. The large black rape seed is very drastic and heating, and is very injurious to young birds unless scalded. Keep a rusty nail in the bird's fountain.

BEE JOURNAL (J. T.).—There is not one published.

HONEY WINE (A. Straw Hite).—This is usually called mead, it may be thus made:—To a gallon of water put 2 lbs. of honey and 1 lb. of sugar; boil for an hour, put in the whites of four eggs to clarify, and skim it quite clear whilst boiling; then put it into a clean tub, and let it stand for a week, putting in a toast with honey to make it work; then run it, put in the peels of three or four lemons, let it stand for a month, and then if it is not sufficiently fine put in more honey, and let it stand longer. We do not know the machine you mention.

VEGETABLE MARROW PRESERVE (D. D.).—The common oval yellow-fruited is as good as any for the purpose. The seeds and rind being removed, boil the flesh with very little water, adding lemon peel to give a flavour, and sugar according to the sweetness desired.

METEOROLOGICAL OBSERVATIONS.

CANNON SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.				Rain.
	Barom. ter and sea level.	Hygrom- eter.		Direction of Wind.	Temp. of air.	Shade Tem- perature.		Radiation Temperature.	
1876.		Dry.	Wet.			Max.	Min.	In sun.	On grass.
JAN.									
We. 13	30.292	29.0	31.4	W.	55.0	35.4	18.9	41.3	17.8
Th. 14	30.278	30.5	32.5	N.N.E.	55.4	35.9	22.4	49.4	20.0
Fri. 15	30.435	34.5	38.0	N.E.	55.5	35.5	23.5	57.4	30.5
Sat. 16	30.492	35.5	39.2	N.	55.5	35.5	23.5	59.5	31.5
Sun. 17	30.475	35.4	36.0	N.	54.5	34.5	23.5	57.9	26.5
Mo. 17	30.523	36.7	36.7	S.W.	55.5	37.1	24.9	48.5	26.4
Tu. 18	30.520	36.5	45.0	W.	55.5	36.5	26.7	49.5	25.5
Means	30.387	32.5	31.7		55.5	35.5	27.4	50.5	26.8

REMARKS.

- 13th.—Frosty, with an unusually white fog (for London); dull afternoon snow at 6 P.M.; a cloudy night.
14th.—Snow everywhere below, and dense heavy clouds above; bright by noon; fine afternoon; very cloudy at night.
15th.—Snow on ground, and leaden-coloured clouds above; very dull all day; thawing a little.
16th.—Very dull all day but no fall; colder towards night.
17th.—Fair, but very cold and dull, soon clearing off; a bright frosty day, the finest we have had for some weeks.
18th.—A very thick fog in morning, but soon clearer, followed by a damp disagreeable day; thawing fast at night.
19th.—Snow all gone during the night; rather dull and dark at 9 A.M., sun shining brightly before 11.30; remainder of the day beautifully bright, almost spring-like, and the stars very bright at night.—G. J. STIMONS.

COVENT GARDEN MARKET.—JANUARY 19.

THE market is amply supplied with all kinds of goods, and prices are generally below the average, business still keeping inactive.

FRUIT.

		s.	d.	s.	d.		s.	d.	s.	d.	
Apples.....	sieve	0	0	0	0	Peaches.....	doz.	0	0	0	0
Cherries.....	bushel	12	0	20	0	Pears, kitchen.....	doz.	0	0	0	0
Blackberries.....	lb.	0	5	0	0	dessert.....	doz.	0	0	0	0
Grapes, hothouse.....	lb.	0	6	0	0	Pine Apples.....	lb.	0	0	0	0
Lemons.....	per 100	0	6	12	0	Quinces.....	bushel	2	6	0	0
Melons.....	each	1	0	2	6	Walnuts.....	per 100	1	6	0	0
Oranges.....	per 100	6	0	12	0	ditto.....	bushel	4	0	12	0

VEGETABLES.

		s. d.	s. d.			s. d.	s. d.
Asparagus	per 100 lbs	10	13 0	Leeks	bunch	0	6 to 1 0
French	bushel	18	0 0	Lettuce	dozen	0	6 to 1 0
Beet, Red	dozen	1	6 0	French Cabbage	doz.	1	0 0
Broccoli	bushel	9	1 6	Mushrooms	potitie	1	0 2 0
Brussels sprouts	sieve	2	6 0	Mustard & Cress	runner	0	2 0 0
Cabbage	dozen	1	0 2	Onions	bushel	2	0 5 0
Carrots	bunch	0	4 0	pickling	quart	0	6 0 0
Cauliflowers	per 100 lbs	1	6 2	Parsley	doz. bunches	2	0 4 0
Celery	dozen	2	6 8	Potatoes	bushel	2	6 5 0
Celery	bushel	1	6 2	Kidney	do.	8	0 0 0
Coleworts	doz. bunches	3	4 0	Radiates	doz. bunches	1	0 1 6
Cucumbers	each	1	0 2	Salsify	bushel	0	9 0 0
pickling	dozen	1	0 0	Scorzonera	bushel	1	0 0 0
Endive	dozen	1	0 2	Seakale	basket	1	6 0 0
Fennel	bunch	0	2 0	Shallots	lb.	0	8 0 0
Garlic	lb.	0	6 0	Spinach	bushel	4	6 0 0
Herbs	bunch	0	2 0	Tomatoes	dozen	2	0 0 0
Horse-radish	bushel	0	0 0	Turnips	bunch	0	4 0 0

WEEKLY CALENDAR.

Day of Month	Day of Week	JAN. 27—FEB. 2, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.		Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	m.	s.		
27	Th	Royal Society at 8.30 P.M.	44.6	31.2	37.9	7	49	4	38	8	43	5	32	1	18	3	27	
28	F	Royal Institution at 8 P.M.	45.8	30.8	38.3	7	48	4	40	8	57	6	50	2	18	15	28	
29	S		45.8	31.5	38.5	7	48	4	42	9	9	8	7	3	18	24	29	
30	SUN	4 SUNDAY AFTER EPIPHANY.	44.7	33.3	38.5	7	45	4	44	9	30	9	34	4	18	34	30	
31	M	London Institution at 5 P.M.	44.9	30.9	37.9	7	48	4	45	9	51	10	43	5	18	43	31	
1	Tu	Zoological Society at 8 P.M.	44.4	33.0	38.2	7	41	4	43	9	43	morn.		6	18	52	32	
* 2	W	Entomological Society at 7 P.M.	44.6	31.5	38.0	7	40	4	49	9	56	0	4	7	18	59	33	

From observations taken near London during forty-three years, the average day temperature of the week is 44.9°; and its night temperature 31.4°.

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NOTES ABOUT POTATOES.



DUNBAR REGENT, with Walker's Early Regent, Walker's Improved Regent, Paterson's Regent, Prince Regent, and nobody knows how many other *aliases* the York Regent—the old true variety—is found under; it is one of the most useful of Potatoes, combining heavy cropping, hardness of plant, size without coarseness of tuber, good cooking qualities, with full flavour, and it is a good keeper. It is a staple kind—unsurpassed for bulk combined with quality, and is justly popular for field or market purposes.

Other qualifications than bulk and fair quality are expected to be found in a garden Potato. Size is of some moment, but it must not approach to coarseness; the tubers should be uniform, with few that are small and unuseable. Appearance is all-potent; a Potato suitable for a gentleman's table must be very regular in outline, have a good clear skin, and the eyes few and even with the surface. Then it must not be "sad," but dry and mealy, free from fibre, core, or discoloration of flesh, and should possess a flavour so extremely delicate as not to be distasteful to refined palates. In growth it must be dwarf, having stiff short haulm, and the produce must ripen early. Of that type are Mr. Fenn's productions—models of what Potatoes should be for garden cultivation.

Of late years many people have been smitten with the disease of "Potato craze." Wonderful things were to have been accomplished by Mr. Paterson's seedlings, but only one of note is left—Victoria, unless, indeed, we admit the claims of Bovinia, the biggest and ugliest, and at the same time most worthless of Potatoes. Then there has been an invasion of American Potatoes, those introductions with which we have been favoured with of late years.

The object of all enterprise in Potatoes would appear to be to increase size and quality, and justly so, for to add size without corresponding goodness is to take a step backward, which will require at least two steps to bring in advance of the starting point. Now, we have in the American kinds a bulk which cannot fail to satisfy the most hopeful aspirant; but Potatoes to take with consumers must have useful cooking qualities—mealiness and good flavour. Which of the American varieties possess these qualities? The earliest? None that I have tried (and to those these remarks must be held to apply) possess them in a degree approaching our older sorts. Early Rose is certainly a prodigious cropper, but even in light soils with high culture it is waxy, and is neither pleasant to look at nor tempting to eat. Extra Early Vermont is very much superior to Early Rose, finer in form and regularity of outline, and superior in cooking quality to it, resembling our kidney-shaped earliest more than any other American kind, also in good cooking properties, and is besides very productive, but exhibiting no improvement over Myatt's Prolific or Veitch's Ashleaf, but rather

inferiority, and it is needlessly extending names to retain it.

Of second earliest Brownell's Beauty (Vermont Beauty) is a very heavy cropper, with strong short haulm, and for so large a tuber is fine-looking, the eyes not being so deep as in the old "Cups" or Red-skinned Flourball. In quality second-rate will accurately satisfy its claims, though as a baking Potato I am informed (for I cannot appreciate a "roasted tater") that it is first-rate. Snowflake is a great advance in appearance, being very handsome and noble-looking, the eyes very little depressed, with a clear white skin, great regularity in the tubers, large and even-sized, and in flavour and good cooking properties running very close for equality our Dons, Rocks, and Regents, "Dunbar Regent" not excepted, whilst for cropping it is the equal of any of those. Its size is too large for a gentleman's table, but for market purposes it will no doubt put forth the claims, which are justified by its merits.

Late American kinds I have represented by Late Rose, which is large, even in form, and shallow-eyed, a very heavy cropper, and of good quality. It is a kidney, and too long to have a good appearance at table. Excelsior is a handsome flattish-round sort, not remarkable for cropping, but possesses good cooking qualities. Willard as I have it is a round-flattish kind, of a very even useable size, deep pink in colour of skin, and russetted, very white in flesh, cooking well late in the season.

Not one of those mentioned surpass our Roughs, Blues (Skerry), Flukes, Fortyfolds, White Dons, White Rocks, or Regents in those essentials of productiveness and quality which meet acceptance with growers and consumers. Of field or winter kinds I have a number which I must, curiosity being satisfied, discard for want of room, experience having shown to demonstration that large autumn and winter kinds in the highly-manured soils of gardens attain to a size and coarseness prejudicial to their appearance and use as compared with the same sorts grown under the best stimulating culture of the farm, to which they will be relegated. Snowflake, however, does not exhibit the coarseness of other kinds, and will therefore be retained. I will now proceed to an account of Rector of Woodstock, Early Market, and Bountiful.

Rector of Woodstock is a second early, flattish round in form, with a white slightly russetted skin; tubers of medium size, as even in size as they are regular in form, boiling excellently, very floury and very delicate in flavour; it is a good cropper, ripening-off early, and is not liable to disease. But this, like most of the second earliest, if planted late succumbs to disease. It has a dwarf and very compact haulm.

Bountiful is a second early red kidney, is a very finely-formed tuber, almost without eyes, very round for a kidney, rather long and pointed, and is extremely beautiful, and possesses when cooked great dryness, with a peculiarly delicate nutty flavour. The haulm is short, and produces a heavy crop of even-sized tubers.

Early Market, a first early, flattish-round in form; eyes slightly depressed; skin yellowish, slightly russetted,

having a very handsome appearance. It is very mealy when cooked, and of the finest flavour. The tubers attain to a good size, exhibiting remarkable evenness, and are freely produced. The haulm is very short, shorter than any other, and very dissimilar to any I know.

So thoroughly satisfied am I with the sterling merit of those three kinds, that I shall add with every confidence Early White Kidney, certain that it will prove a fitting companion for Early Market in first earlies. Not the least advantage these kinds possess over older sorts is their refusal in highly manured soil to grow into coarseness. Considering their extremely fine appearance, high quality, and fertility, they are likely to have a long run of popularity for garden culture; whilst for field cultivation against kinds of their own season I feel certain they would compare favourably, but to compare them with Regents is the equal of comparing a mountain sheep with a Leicester. There is room enough for Early Market, Bountiful, and Bector of Woodstock from June to November, at which season Dunbar Regent is at least a waxy lump.

Turning from the newer to older sorts, Myatt's Prolific Ashleaf and Veitch's Ashleaf are the best of the forms of this type, being good alike for frame or forcing purposes as for garden culture; whilst as a second early I am run out, designated, of every sort but the Lapstone, to follow which there is no better than Victoria, sometimes called "The Queen." As well may "Dunbar Regent" be called "The King."

I must crave a few words on disease. The fungus came upon us very early last year in the form of the "curl." The curl caused considerable alarm in Scotland and the northern counties at the latter part of the last century. For this grand curl discovery, advancing us no nearer a remedy for the disease than did the offering and withholding by the Royal Agricultural Society of Earl Cathcart's £100 prize, a gold medal was justly given by the Royal Horticultural Society. What a reward science obtains as compared with practice! (Let us hear no more of the non-recognition of science.) Practice was represented by Mr. Thomas Dickson of Edinburgh so far back as 1806, who was not only cognisant of the new disease, but ready with a remedy—viz., employing as seed-stock unripe tubers, and which, it is curious to note, was one of the best means for the prevention of that disease so disastrous to the Potato crop of 1845 and subsequently. Science in this instance verifies but does not advance practice; and as the resting spore is found to exist in the tuber tissue, it is vain to hope for any remedy other than preventing the spore from obtaining a hold of the tuber and manifesting itself in "curl." This is secured by taking-up the seed-stock when full sized but with the skin barely set. The ripening process, which gives the tubers their esteemed farinaceous quality, just commencing is thereby stayed, and we obtain produce through which the mycelial threads of the fungus have not run, whilst the tubers are for every purpose of growth better than ripened sets, giving the most healthy and productive plants.

Practice has also shown that seed had from a colder or more northerly climate gives a stronger sturdier growth of plant, increased yield, and higher quality than is obtained from seed had from a warmer climate. Those who have had seed Potatoes from Scotland for growth in the warmer parts of England will have had gratifying proof of this. Change of soil also exerts considerable influence on vegetable growth, and in none more than the Potato, and it is from these attentions to the result of practice that we may expect freedom from disease in Potatoes, of which I had none free the last season in earlies or second earlies, except Bountiful, nor can I say the crop has been good or of high quality.—YORK REGENT.

LILIUM AURATUM SOWING.

Mr. McIntosh of Dunevan, Ostlands Park, has ripened in his garden some seeds of those noble plants of the *Lilium auratum*, of which we published a drawing in our No. 757. Seedlings may be easily raised; and knowing that Mr. Douglas at Loxford Hall had so propagated this Lily we asked him for some relative information. He replies as follows:—

"I had an exceedingly fine variety of *L. auratum*, which appeared amongst a lot of bulbs that had been received direct from Japan; and wishing to increase the stock of it more quickly than by the usual offsets from the old bulbs, one of the best flowers was selected and the stigma dusted with pollen from the anthers of the same flower. In due time a fine pod of seed was obtained, which ripened about the end of September. The seeds were shaken out and kept in a dry place until

April; they were then sown in 6 or 7-inch pots, and the best compost is one of turfy loam and peat with a little leaf mould. The pots were filled up to within an inch of the top, and the mould was made quite level; on this the seeds were sown, covering over with a quarter of an inch of fine mould. The pots were then placed in a hotbed with a gentle bottom heat, along with some pots of *Gladiolus* seeds. In two weeks the *Gladioluses* were quite up or fast appearing aboveground, but no signs of the young Lilies. Week after week passed and the *Gladioluses* made rapid progress, but still no young Lilies. The pots were examined, and the seeds were quite fresh. We kept the soil moist, and the pots were moved about in cold frames all the season until the following April—twelve months from sowing the seeds. They were still fresh, and when the pots were again placed in heat the young plants appeared. They made nice little bulbs the same season, and have been now potted off. With liberal treatment they will flower in three or four years."

NOTES FROM MY GARDEN IN 1875.

VEGETABLES.

If I could look with some little degree of satisfaction on my little greenhouse during the past season it was very different in the vegetable department of the garden. It was not merely the plague of weeds which daily annoyed me, and for which I could find no remedy, but that the peculiar character of the season interfered with the quality and quantity of the crops. Peas, for example, what a plague they were! and yet I went in for a good many sorts, hoping to gain some experience of their value; but the early sorts were completely spoiled by the drying winds of April, May, and the early part of June, while the wet of July sent the later varieties growing at such a rate that "Jack and the Peastalk" might have been substituted for the old familiar Beanstalk, and as a consequence the crop was considerably diminished. The sticks were not tall enough for the Peas, which hung about in most admired disorder. Of those which I had the following notes were what I was enabled to make.

Emerald Gem.—This has fully borne out its previous good character; nor can I at all understand why it should be considered the same as Danecroft Rival, for if there were no other distinction its very robust growth would surely distinguish it from that variety which was always described as delicate in flavour and is excellent.

Bijou (Suttons).—An early dwarf Pea of the Little Gem type; and as that variety has considerably run out it will be of great value in replacing it. Besides, the pods are larger and better filled.

First Crop Blue.—A second early, distinct, blue wrinkled Pea. Flavour good.

Best of All (Maclean).—I am further confirmed by this season's experience that there is no Pea for a general crop superior, if equal, to this for an amateur. Its length is about what we want—3 feet, so that we do not require very tall stakes. How far it will bear comparison with Mr. Turner's new Pea Dr. Maclean I do not know; but all that I have seen of the latter, and all one hears, makes it clear that it is a Pea of first-rate excellence.

Giant Emerald Marrow (Suttons).—This is without doubt a grand Pea; and although, as I have said, the wet season at the time it comes in—end of June and beginning of July, prevented one's forming a thorough estimate of it, yet its qualities are undoubted. It is very prolific; the pods fill well, containing from eight to ten peas, which boil a beautiful green colour and are of excellent flavour, a quality in which some of the new varieties are considerably wanting.

G. F. Wilson.—A very fine Pea of the Veitch's Perfection type, and, like it, possessing the qualities of productiveness and good flavour.

Duchess of Edinburgh (Suttons).—A very handsome, prolific, and good-flavoured Pea. Its height ought to be about 5 feet, but this year it ran up to 6 and 7; and in a dry season I believe it will be very valuable.

Besides these I had four small packets sent me by my friend Mr. Laxton of his new Peas. From so small a quantity one can hardly judge the value of a new Pea; but of the four, Unique and Dr. Hogg, the former a dwarf Pea and the latter a green wrinkled one, seemed to be very promising.

From Peas one naturally turns to Potatoes; and bad as the season was, I consider myself to have been exceedingly fortunate. The early sorts in my garden turned out very well.

I planted *Lee's Early Hammersmith*. It again proved to be a valuable kind, most probably a selected strain of the Ashleaf, but more robust, and the flavour equally good.

Rector of Woodstock (Fenn).—Unfortunately this promising variety with me was very much attacked by the disease—more so than any kind I grew this year. I have found it so for two years, and hope on a third trial I may be more fortunate. I am the more surprised at this, as Mr. Fenn, I see, says it has been very free from disease, and yet my soil is not heavy.

Snowflake.—Without doubt, as far as my judgment goes, the only one of the Yankees worth growing. It again did very well with me, and we all pronounced its flavour to be good, while in colour it well deserves its name. Some have a fear of its degenerating: for two seasons I have found it good.

The following kinds were grown in a field of sandy soil—

Lapstone.—I can in no way alter my opinion of this Potato—that for flavour there is none to equal it. It wants more robustness, as it is liable to disease.

Hundredfold Fluke.—I have found this, as before, but little affected with disease; and although not to my own taste quite as to quality, it is much liked by some of us.

Red-skin Flourball.—This again has proved, notwithstanding the season, a very excellent kind for the purpose for which I use it—baking, and it certainly resists the attacks of disease better than most kinds.

Victoria.—I can say nothing better of this than what is written to me by one of our most eminent seedsmen—"The Victorias you send are splendid; we have nothing like them about here."

I also received from the Messrs. Sutton of Reading a sample of their new kidney Potato *Magnum Bonum*. It boiled well and was of good flavour, but I hope to be able to judge of it this year by growing it under my own eye.

I have this year again followed out my plan, as far as the season would permit me, both of planting and taking up early; and although not able to perform either operation quite as soon as usual, I have found the advantage of it; and although some of the Potatoes did not seem to be quite ripe when taken up, I have lost very few since. Out of five sacks of Victorias I do not think there is a peck of diseased tubers.

I wish I could write differently than I do of Tomatoes, but I fear I must give up all hopes of growing them. For now three seasons I have tried it, and each year the failure is more complete. They grow well, come into fruit and swell, but they become attacked with a disease very analogous apparently to that of the Potato, and not one comes to perfection. I tried both *Conqueror* and *Excelsior*, and the result was the same with both. That it is to be referred to atmospheric causes is quite clear, for I potted a few of the plants from the same seed-pan and placed them in the greenhouse, and these were quite free from any disease. Many persons in this neighbourhood have complained of the same, and I very much fear the result must be the abandonment of Tomato-growing here.

Cucumbers I have but small facilities for growing, having but one frame, and so must confine myself to one sort. It is a matter, therefore, of some consequence to me that I have a good one. This year I tried *Duke of Connaught*, and found it to be a very valuable kind, producing fruit freely, sufficiently long for any purpose, and of good flavour. It is a white-spined variety, and has a remarkably small handle, so that nearly all the fruit is fit to use.

French Beans.—*Canadian Wonder* still maintains its character, and I do not care to grow any other variety but it. It is good at all times, and is a great favourite with greengrocers on account of its fine handsome appearance. It is also of remarkably good flavour, and the amount it produces simply prodigious.

In other vegetables I have nothing particularly worthy to record. Some of the old standard kinds are still unsurpassed, but occasionally novelties do force themselves to the front, and therefore it is well that their merits should be recorded; and the experience of many will be most useful, even although like myself their "diggings" are but small.—D., *Deal*.

WITLOOF.

A new and very excellent vegetable was shown for the first time in this country at the meeting of the Fruit and Vegetable Committee of the Royal Horticultural Society on the 19th inst. It was raised from seed supplied to the Society by Messrs. James Carter & Co., and was grown in the garden of the Society at Chiswick.

Witloof or Witteloof is Flemish, and signifies White-leaf, from the plant being blanched in the same way as *Seakale* and other vegetables. It is very common in Belgium and especially about Brussels, where it is sometimes called *Chicorée de Bruxelles*. It is blanched and used in the same way as *Seakale*, and the smaller side shoots which are produced after the crown is cut form an excellent salad. We have for many years remarked this excellent vegetable at the tables of our Belgian friends during the winter and spring months, and have been surprised that through the enterprise of our generally enterprising seedsmen it has not sooner been introduced into this country. We have grown it for several years from seed procured in Brussels, and found it to succeed perfectly; and now that it has been introduced by Messrs. Carter & Co., to whom we are indebted for the accompanying illustration, we

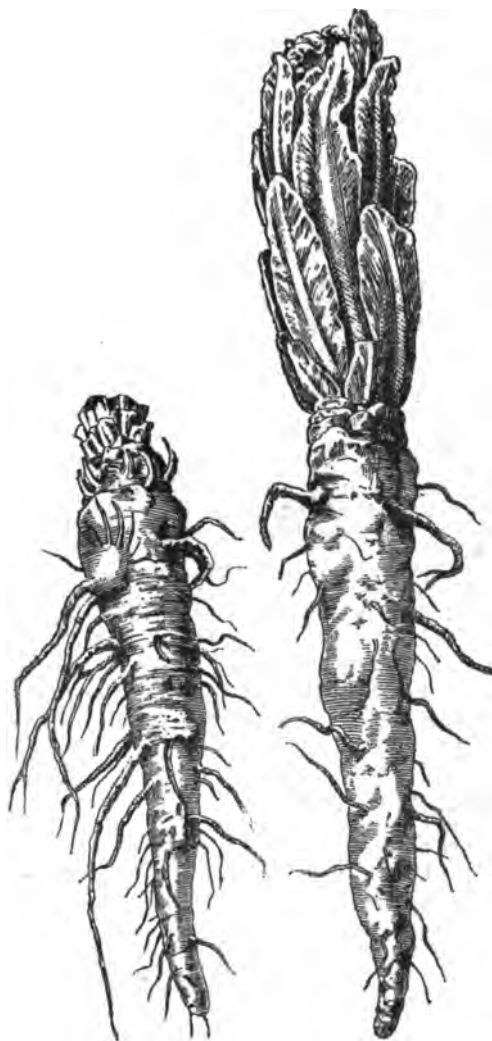


Fig. 18.—Witloof.

shall expect to see it become as widely distributed throughout the country and in our markets as forced *Seakale* or forced *Rhubarb* are.

Witloof is a variety of the common *Chicory* (*Cichorium Intybus*) which has been long cultivated in this country for salads, but is totally different from that variety inasmuch as the latter, to be well adapted for salads, requires to have a small midrib and a thin blade to the leaf, whereas in this "*Chicorée à grosse racine améliorée*" the great object is to have a thick and fleshy midrib and blade so as to have it as succulent as possible.

Our mode of culture has been to sow the seed on good well-manured soil in drills 9 inches apart in the open ground in the end of May or beginning of June just as the weather per-

mits, and when the plants are strong enough to thin them out to 6 or 8 inches apart. The roots are taken up in the end of October and November, and all the leaves removed so as not to injure the crown; these are then placed in circumstances which are most convenient for blanching. The different ways of doing this will be suggested to people by the conveniences they have at their disposal. Those who have a Mushroom house may use that; those who have not can plant the roots in boxes and put them under the stage of a greenhouse, protecting them from the light. The mode we adopt is the following, which we have seen in Belgium, and which will be the most convenient for most households.

In the corner of a cellar, a stable, cow-house or shed protected from frost, form a cone of horse dung 2 feet in diameter at the base and as high as may be desired. Outside of this place a layer of soil on the floor 18 inches wide and 4 or 6 inches thick. On this place the Chicory in a row close together, with the roots towards the horse dung and the crowns just outside the edge of the soil. Upon these put a second layer of soil and then another layer of roots, proceeding in this way till the top of the cone is reached. If the apartment is dark it will not be needful to place any covering over it, but if any light is present it must be covered with a mat or any other covering, and this again enveloped in straw, long dung, or any other litter. In this case sticks will require to be stuck into the cone at various distances, and protruding about 9 inches to prevent the covering from pressing against the Witloof when it begins to grow. The fermenting mass of dung stimulates the roots into growth. A more homely way is to select a dry piece of ground, and dig out a trench as for Celery, in which plant the roots in a row close together. Let this be covered over with hoops or branches of trees, and then enveloped in a thick coat of long dung. Seakale pots may also be used as for Seakale.

When the crowns have grown 4 to 6 inches in length they are to be cut off in the same way as those of Seakale and so as not to disturb the roots in the cone, which are to remain and to be kept covered up, when they will produce an abundant crop of small shoots, furnishing a constant supply of excellent salad all through the spring months. The crowns are to be stewed in gravy or in any other way that the taste of the household may desire, and served in the same way as Seakale.

We can strongly recommend this to every person who has a garden, and we would do so especially to enterprising forcing gardeners, who may reap as rich a reward from its cultivation as Mr. Myatt did by the introduction of Rhubarb.

TREES ON WHICH MISTLETOE GROWS.

OBSERVING in your issue of the 13th inst. an article on the Mistletoe question, I thought it may not be unacceptable to your readers if I name a few trees on which it may be seen growing with us—namely, the common Lime, Whitethorn, common Maple, Black Poplar, Willow, wild Crab, and a variety of Sycamore seen growing rather extensively in Canada (one example of which we have here in the pleasure grounds), but the specific name is lost; and I may also mention that there is a bush of Mistletoe growing out of one of the standard Apple trees in the kitchen garden about 2½ feet in diameter, produced from seeds inserted in the bark about twelve or thirteen years since by my predecessor. The tree is about twenty years old from the graft. And as to the question of injury to the tree on account of the Mistletoe, I can affirm, as far as this instance is concerned, that the branch on which it is growing is the most luxuriant and healthy on the tree; how it may hereafter affect the tree remains to be seen. As to the Limes and Whitethorns more especially, I can say we have some trees in the park so smothered with the parasitic growth, that at first sight it is almost difficult to determine which is the parent plant by looking at the upper portions only.—H. W. WARRER, *Gardener to the Earl of Portsmouth, Whitechurch, Hants.*

EUCALYPTUS GLOBULUS.—In your paper of the 6th I see reference is made to this tree. At the Mooka Iron Mines, twenty miles inland from Bona in Algeria, it was first planted eight years ago, and with such beneficial effects that fever is reduced very considerably. The foreman who showed me over the works said that they had not above one case of fever now when formerly they had four. The consequence is that the company are planting it by the million. Another benefit is

said to belong to it—viz., that mosquitos will not come within its influence.—H. T. H.

MR. PEARSON'S NEW PELARGONIUMS OF 1876.

It makes no difference whether one visits Chilwell on the 24th of June or the 21st of December, the Pelargoniums will always be found most attractively in bloom. It is impossible without seeing them to form any conception of the gorgeous display which they make massed together. They bloom as profusely throughout the whole winter as the summer. I have seen them in nearly every month of the year, and if they look better at one time than another it is in the very shortest days of the year. Most other flowers then, or at any time, will pale before them, and it is difficult to say what their greatest recommendation is. Probably it is their easy culture, coupled with the extraordinary quality of flowers they give as compensation for the little attention they require. There is nothing exacting in their cultivation, nor is there any "secret" brought to work on them at Chilwell. Common everyday fare to which they may be treated in the hands of anyone is what they thrive on. Large quantities of cuttings are rooted at Chilwell in the autumn, and potted singly into 8-inch pots in a mixture of loam and sand, and set on stages about 3 feet from the ground. Very little fire heat is used, unless to exclude frost or expel damp: under this treatment they bloom amazingly. Sometimes old plants are allowed to flower for eight and ten months incessantly, and at other times the plants are cut down as quickly as they grow to supply young plants.

It is a great mistake in amateurs with limited time and accommodation putting themselves to no end of trouble and anxiety to keep a few semi-hardy plants in existence throughout the winter, when they might have their greenhouses replete with healthy Pelargoniums and abundance of every existing shade of flower with no inconvenience whatever. Some may think and others may take the liberty of saying it would be a tame affair—a houseful of Pelargoniums, but in this I beg to differ, and it is infinitely more preferable to see an entire houseful of Pelargoniums nicely in flower than rows of barely-furnished plants.

Those who are familiar with all the Pelargoniums which have been sent out from Chilwell, especially those introduced last year, will know that to excel Lady Byron, Ethel, Mrs. Vickers, Brutus, Sir S. H. and Lady Soudamore, Stanhope, A. Henderson, Laura, Little Carr, Mrs. Jacoby, and others, will be an accomplishment which is attained in those being issued this year for the first time.

Amongst scarlets Wordsworth, Havelock, and Lord Zetland are superior to Corsair, Veuvius, or any other of this shade. Leopard is a beautiful somewhat striated salmon colour; and amongst that beautiful shade pink Lady Sheffield is excellent, and so is Sybil Holden, Mrs. Lancaster, and Louisa. For many a day Amaranth was my favourite pink, and after that I gave preference to Mrs. Gibbons, and finally Annie Orton, but these I unregretfully relinquish in favour of any or all the four I have just named. E. Davis is a splendid purple crimson variety in the way of Earl Mansvers. Mary Pearson is a beautiful rose colour, and Mrs. Gregory is of the same hue, both producing large compact trusses. Captain Holden and Frederick William bear some resemblance to the two last named, but they are about three shades deeper in colour; and last but not least comes David Thomson, which is a splendid crimson variety, the individual blooms and trusses being of immense size and of great substance, and in no way creditable to the worthy author of the "Handbook on the Flower Garden."

Before finishing let me say that amongst older varieties of the Chilwell strain the Rev. T. F. Fenn is a crimson of great merit, alike useful in a pot or bed and an excellent winter bloomer.—J. MUM, *Lenton.*

THE ROYAL AQUARIUM AND SUMMER AND WINTER GARDEN.

UNDER the auspices of Royalty and a clear spring-like day this imposing building was declared "open" on the 22nd inst. It was a happy idea of Mr. Wybrow Robertson to supplant a block of incongruous buildings by a palatial structure in the immediate neighbourhood of the Houses of Parliament and Westminster Abbey, and completing a trio of public edifices eminently worthy of a nation's patronage. No sooner was the

idea promulgated than energetic measures were taken to carry it into effect, and within a year Westminster was provided with a Crystal Palace of its own, and in the place of dirt and equalor bloomed bright and beautiful flowers relieved by stately Ferns and tropical plants, transforming a veritable desert into a literal garden by the magic wand of energy and taste.

The building, of which the Palace at Sydenham is the natural prototype, is founded on purely gardening lines laid down by our great representative of mechanico-horticultural genius Sir Joseph Paxton. The edifice is also for gardening, for it is to be kept "ever green and ever gay" by our present master of the art of floral decoration, Mr. John Wills. It has thus a direct claim to our notice, and both in its aims and objects, and the mode of carrying them out, it has our wishes for its success.

The edifice is imposing, the body consisting of a large promenade or conservatory wherein plants are grouped—the sides being occupied by the rock-bound tanks, while above them the surrounding gallery is devoted to pictures and works of art; added to these attractions is a concert-hall and reading-room. Thus the gratification of every sense is provided for, and the treasures of sea and land and intellect are or will be spread under the gigantic crystal roof.

The building is 600 feet in length, the conservatory or promenade being 340 feet by 160 feet, and an entrance hall 186 feet by 80 feet, with other accessories. The roof of the principal avenue is of iron and glass, and is glazed on the principle patented by Mr. Rendle, no putty being used or metal exposed to the weather. The tanks are 260 feet by 53 feet, and will contain 800,000 gallons of water, which by a system of oxygenising will be preserved in a state of purity for an indefinite period.

For the occasion of the opening Mr. Wills had made the garden a verity (the tanks being unoccupied) by the disposition of upwards of 20,000 plants. These were disposed in groups along the sides of the hall and at the base of three fountains, at the orchestra front, and with some choice gems fringing the Royal pavilion. These plants were not crowded or formally arranged with the "highest at the back." The beds surrounding the fount were carpeted with *Lycopodium denticulatum*, in which were plunged irregular groups of Hyacinths, Tulips, Primulas, Cyclamens, and Lilies of the Valley in profusion; the taller plants, which were thinly dotted, consisting of Dracenas, Musas, Aloesias, Richardias, Pandanus, Palms, &c. At the front of the orchestra was a fringe of *Isolepis gracilis* and Ferns, enlivened with Heaths, Primulas, *Imantophyllums*, &c., and relieved with Palms.

The fringe of the Royal box was exceedingly chaste and effective, the groundwork being composed of Lycopods and *Adiantum farleyense*, and brightened by graceful sprays of Orchids—*Odontoglossum Alexandræ*, *Phalenopsis Schilleriana* and *amabilis*, *Cypripediums*, &c.; the taller plants consisting of the most elegant of all Palms *Cocos Weddelliana*. There were also groups of *Dicksonias* and large Palms, *Camellias* and other ornamental plants in great variety.

From the galleries were suspended hanging baskets, both large and numerous, these being filled principally with Palms and fringed with Ives and Vines. In a word they were green, and properly so, as affording an agreeable and acceptable relief to the red, mauve, and gold which prevail as the permanent decorations of the building. Mr. Wills' stand was most attractive by an array of artistically-arranged bouquets of *Camellias*, Orchids, Azaleas, Lillies, &c., associated in the "highest style of art."

On the conclusion of the ceremonial His Royal Highness the Duke of Edinburgh sent for Mr. Wills, and expressed to him his great satisfaction with the floral decorations made on that occasion. The first day's success was an augury of the permanent success which we trust will attend this laudable undertaking.

NOTES AND GLEANINGS.

We have inspected, with much pleasure, the honours won at the late Cologne Exhibition by the eminent hot-water engineers, Messrs. JOHN WEEKS & Co., King's Road, Chelsea. This gratifying recognition of British enterprise in the cause of horticulture is conveyed in the form of an imposing DIPLOMA bearing a donation of 1000 marks (£50), and is accompanied by a massive GOLD MEDAL. The diploma, which measures 2 feet 6 inches by 2 feet, is produced in a highly artistic manner, illustrative of the different phases of horti-

culture and the allied arts, as sculpture, mechanics, literature, &c. The gold medal, which is 2 inches in diameter, bears the profile and superscription, "Kronprinz Friedrich Wilhelm, Protector," and on the obverse the Royal arms and circlet, "Angusta protectorin der Flora Internationale Gartenbauausstellung zu Ooeln." Messrs. Weeks are to be congratulated on their meritorious achievement.

— We have sent to us by a friend a letter, dated March 14th, 1821, from T. A. KNIGHT, Esq., first President of the Royal Horticultural Society, and the well-known pomologist. The letter has not been published, and we take from it the following extract:—"I have also added grafts of a few varieties of Pears, some of which are probably quite unknown to you; and indeed have not borne in this country till the present year. No. 1 is Napoleon, a large Pear, which ripens from November to Christmas. I have seen it only on a wall, but it will blossom early as an espalier, and if it will bear, it will be found to possess great merit. No. 45, Marie Louise, season December, a most admirable variety, much superior, I think, to any we are possessed, but whether it will succeed without a wall I cannot say. No. 17, Capimont, season October and November, of rapid growth and much disposition to bear as a wall tree, and its blossoms appear hardy. An excellent variety. No. 15, Passe Colmar. I think this by far the most valuable Pear I ever have seen. Its blossoms on a wall are extremely hardy, and the variety there is productive to an injurious extent. I believe it will succeed as a standard in your climate very well. Season March and April. The four following varieties—Nos. 2, 3, 4, and 5—are for standard trees solely. No. 2 is a cross between the Jargonelle and Autumn Bergamot. The tree bore last autumn for the first time, having exercised my patience for nineteen years. Its form and size are what might have been anticipated from its parents. The Horticultural Society pronounced it excellent. Season November to Christmas. The flesh is perfectly beurée." No. 3 is new also, but bore in the autumn of 1819. The fruit remained quite sound till May, when it became what the French call demi-beurée. Some friends who dined with me at that period thought it very good; and I thought it so for the season. The tree appears a very free bearer. No. 4 is the Elton, the best Pear, I think, of its season, if gathered about ten days before it is eaten, and before it is quite ripe. Season the end of September; and if the crop be gathered in succession it may be brought to table in equal perfection, or nearly so, for six weeks. It is quite worthless if trained to a wall. It is always without seeds or internal cavity. No. 5 is the Aston Town, an excellent variety, which succeeds well as a standard tree; but the trees do not bear till their branches become pendent, and therefore should be made pendent by art. I send graft of one variety of winter dessert Apple, the best I know—the Gilliflower. Season, all winter."

— THE Royal Horticultural Society of Ireland has fixed its EXHIBITIONS to be held on April 27th, May 18th, June 29th, August 31st, and November 9th.

— ONE of the celebrities of Fleet Street was ISAAC WALTON. He lived at the house now the third from Chancery Lane going to Temple Bar. It is now tenanted by a jeweller, but Walton was a linen-draper. He is further connected with Fleet Street by having in 1652 as the publisher of his "The Compleat Angler," "Rich. Marriot, in S. Dunstan's Churchyard." We welcome the fac-simile reprint of that first edition just published by Mr. Elliot Stock, Paternoster Row, and commend it to purchasers as a literary curiosity. It is far more Waltonish than recent editions—more brief and racy. We will only quote one passage, discussed in these pages some years since.

"So I the fields and meadows green may view,
And daily by fresh rivers walk at will,
Among the Daisies and the Violets blue,
Bed Hyacinth, and yellow Daffodil,
Purple Narcissus, like the morning rays,
Pale Gandergrass and asure Culverkays."

No one has detected the plant known then, probably in Staffordshire, where Walton was born and resided when he became an author, but we must note down a jocular reply.

"Culverkays—Culverkays—
Why they are pigeon Peas."

There is some reason as well as rhyme there—*Culver* was the Anglo-Saxon for a pigeon, and *key* is a seed vessel, and the flowers of Vetches are blue, "azure." The wild pigeons feed on the Vetches, which are of the same natural order as

* This cross was afterwards named Tillington.

the Pea. The Tufted Vetch (*Vicia cracca*) is called in Gaelic *Peasair-luch na coille*.

— We regret to have to announce the death of M. JEAN-LAURENT JAMIN, formerly the eminent nurseryman of Bourgl-la-Reine, whose name is "familiar as a household word" to all horticulturists. M. Jamin was in his eighty-third year, and will be greatly regretted by a wide circle of friends. As a pomologist M. Jamin took high rank.

THE SYCAMORE.

THE name is literally "The Fig-Mulberry Tree," *syke* being the Greek for a Fig tree, and *moron* for the Black Mulberry. The name was applied to the true Sycamore (*Ficus Sycamorus*), the fruit of which is a Fig, and the leaves are like those of the Mulberry. The botanical name, *Acer pseudo-platanus*, Mock Plane Maple, shows that our Sycamore belongs to the Maple genus, and much resembles the Plane tree.

It is a native of mountainous districts of Germany, Italy, and other parts of Europe. The date of its introduction into England is not known, but we have the negative evidence that it was between the years 1596 and 1638, that Gerard does not

but flowers several years sooner, sometimes even perfecting its seeds sooner also. The longevity of the tree is from a hundred and forty to two hundred years, though it has been known of a much greater age. The wood weighs per cubic foot, newly cut, 64 lbs.; half-dry, 56 lbs.; dry, 48 lbs. It loses in drying about a twelfth part of its bulk. When the tree is young it is white, but as the tree gets older the wood becomes a little yellow, and often brown, especially towards the heart. It is compact and firm without being very hard, of a fine grain, sometimes veined, susceptible of a high polish, and easily worked either on the bench or in the turning-lathe. It does not warp, and is not likely to be attacked by worms. It is used in joinery, and turnery, and cabinet-making, by musical instrument makers, for cider presses, and sometimes for gun stocks. Formerly, when wooden dishes and spoons were more used than they are at present, it was much in demand, especially in Scotland, by the manufacturers of these articles. As underwood the Sycamore shoots freely from the stool to the age of eighty or a hundred years. As a timber tree it is most advantageously cut down at the age of eighty years, or from that age to a hundred. As an ornamental tree it produces the best effect either singly or in groups of two or three, placed



Fig. 19.—THE SYCAMORE.

mention it in his "Herbal" in the year first named, but it is mentioned in the edition of the year last named.

It is a very ornamental tree, and is also useful as a shelter, for prevailing winds, however strong, do not bend it from a perpendicular growth, nor is it injured by the sea spray. An objection is that its leaves at all periods of their growth are especially liable to exude a portion of their saccharine sap, which is known as "honeydew."

The colours of the foliage and seed vessels vary so much according to the time of their growth and decay as to attract a poet's notice. Cowper wrote—

"The Sycamore, capricious in attire;
Now green, now tawny, and ere autumn yet
Has changed the woods, in scarlet honours bright."

The sap is so saccharine that sugar has been extracted from it, but not in quantity sufficient to render the extraction profitable; 116 lbs. of sap would yield only 1 lb. of sugar. That obtained was like common brown sugar, but having a different flavour.

It rarely attains a height of 80 feet. Loudon says of it:—"The growth is very rapid compared with that of most other species of *Acer*, particularly when it is in a deep, free, rich soil, and in a mild climate. It arrives at its full growth in fifty or sixty years, but it requires to be eighty or a hundred years old before its wood arrives at perfection. In marshy soil or in dry sand, and even on chalk, the tree never attains any size. It produces fertile seeds at the age of twenty years,

sufficiently near to form a whole, but not so as to touch each other, and in rows or avenues."

We have observed that rabbits seldom eat the bark of young Sycamores, and have succeeded in establishing a plantation of them when most other trees were destroyed by the "vermin" within a week of being planted.

APHELANDRA AURANTIACA ROEHLII FROM SEED.

I AM informed by a gardener that the most easy and certain way of raising a stock of this stove plant is by sowing the seed in heat in the spring and growing the plants similarly to Cookscombs; but the *Aphelandras* do not require to be frequently shifted, and the soil best suited to them is peat, leaf mould, and silver sand, with a slight addition of loam.

I have hitherto grown these plants from cuttings, and while I have been frequently dissatisfied with their slow growth, their brilliant flowers have generally afforded me ample recompense.

My informant has stated that not only do these plants grow with the greatest freedom when raised from seed, but that the plants will flower the same season if not stopped, and will be found in their small state most useful as autumnal decorative plants both for the conservatory and for ornamental receptacles in the drawing-room. He assures me of their certainty of

flowering the first year, and has given me some seed which I intend shall be proved.

Before testing the correctness of the statement I name it at a period enabling others to try this mode of culture, for a supply of small healthy flowering plants cannot fail to be most valuable in hundreds of gardens.

The plants when not stopped for flowering the same season require to be potted rather deeply, giving small shifts from thumbs onwards to 5-inch pots; miniature plants, however, flowering freely in 3-inch pots. Other plants should be stopped for making larger specimens the following season. The plants require briar top and bottom heat, plenty of light and copious supplies of water in their growing season, including frequent syringings. The plan is worthy of a trial, for if it fails the loss will be small, while if it succeeds the gain will be great.—R. H. S.

MUSSÆNDA FRONDOSA.

UNDER the above name I have for some years cultivated plants which have never failed being admired by those for whom they were provided and their many visitors. The plants, which have flowered throughout the winter and during the early spring months, have afforded a fine contrast to the effect produced by the Poinsettias.

Like the Poinsettias, the Musssendas are not ornamental by their flowers so much as by the bracts accompanying them. In the former plants these bracts are rich scarlet, in the latter pure white. The plants are altogether smaller than the Poinsettias in habit, foliage, and flower heads; yet I have frequently had pure white discs of Musssendas 8 inches in diameter, and when half a dozen of these are produced on one plant the effect is something to be admired.

But these plants are not of the easiest culture, and hence it is, perhaps, that they are so seldom seen in gardens. They are stove plants, requiring much the same treatment as Gardenias, to which they are allied, both genera belonging to the natural order Cinchonaceæ. Yet the Musssendas require more closely pruning than Gardenias; but I have invariably had the finest heads from young plants which have been treated as follows:

Select healthy cuttings of the young spring growth, but not too soft, and strike them in sand in briar heat. Pot them off when rooted in small pots, using peat and a free admixture of silver sand. Plunge the pots in bottom heat and syringe the plants freely. Shift-on as required, using loam with the peat when the plants have attained strength. Stop them once or twice, but not after July. I have occasionally struck five cuttings in a pot, and shifted them on without separating the plants, obtaining thereby good heads, but sacrificing compact habit.

During the growing season the plants require briar heat, a moist atmosphere, and plenty of light. Until the pots are filled with roots they should be plunged in bottom heat, and after that period they should be placed on a shelf in the stove as near the glass as possible to prevent the plants being drawn. After blooming they should be rested, and subsequently cut down, starting them again in heat and renewing their soil; but young plants are the best.—W. J. B.

FLOWERS IN THE NORTH.

Now that the winter appears to be gone we are having some lovely bracing breezes from the west and the rays of old Sol to cheer us. We feel braced up for fresh action with a rise in temperature of some 12° or 14°, and are anticipating the spring. We have a few lingering tokens left us of the past year in the shape of hardy Perpetual Roses, and the old friend Gloire de Dijon gives us a few buds yet, and the Christmas Rose is still affording us pleasure in the sunshine and for bouquets, and the *Jasminum nudiflorum* is gay as gay can be at this season. The old monthly China Rose affords us nice buds for a variety of purposes. *Forsythia viridissima* is no way behind with its lovely yellow blooms; a few stray blooms of *Cydonia japonica*, too, are very desirable at this midwinter season.

Then we are in possession of some of the harbingers of spring. The Winter Aconite is in bloom; the Snowdrops are peeping; the *Salix* is pushing on for Palm Sun-tide; the *Cyclamens* with their beautiful foliage, flowers in themselves; the *Daphne mezereum* almost tempted to break forth; the Daisy peeping up among the grass; the Dandelion half afraid to show his face to the sun; Primroses greeting us with their cheerful presence; the Bearsfoot rearing up its head in its

wilderness home; a stray shoot of *Alyssum saxatile* giving us a few blooms; Violets, too, are doing us good service in a sunny corner, with other of our old favourites, telling us to anticipate the spring.—M. H., Bedale, Yorkshire.

GROS COLMAN GRAPE.

PERMIT me to thank your correspondents for detailing their experience with this fine-looking Grape.

My object was to test its merits as to quality. I am glad to note that in this respect it has proved better than I had anticipated. My experience of the Grape was limited to cool treatment, and the fruit was not good, and when I have tested it in half a dozen gardens under similar treatment I have always found it deficient in flavour. This, it would appear, was because it required more heat to bring out its good qualities, for in every instance where it has proved satisfactory the Vines have received Muscat treatment.

A fair amount of evidence is now furnished that Gros Colman is worthy of cultivation if heat can be afforded to perfect its fruit. It is, besides being a good keeper, one of the most imposing of black Grapes, and, especially for market purposes, will produce most tempting fruit.

It ought also to be of good quality, or it should not have taken first honours at the great Show at South Kensington, where I read of its beating "splendid fruit" of Lady Downes's from Mr. Kniller of Malahanger Park, and Mr. Coleman of Eastnor Castle. As neither those growers nor the sort they exhibited is easily beaten, Mr. Wildsmith must have had something more than appearance to have turned the scale in his favour with Gros Colman.

Although it is exceedingly easy to err in arriving at a conclusion too hastily, yet the testimony forthcoming would seem to warrant at least one Vine being tested in every well-heated vinery where a variety of Grapes are not objected to, and it is equally evident that Gros Colman will not perfect its fruit in a low temperature.—EX-EXHIBITOR.

PEARS AND THEIR CULTURE.—No. 1.

THE culture of Pears is beset with few difficulties which may not be overcome by ordinary care and painstaking. True it is that some delicate sorts are materially affected by climate and soil, yet really good kinds are so numerous that it is quite possible to make a good selection for everyone and everywhere in this country.

The stocks upon which Pears are grafted often exercise greater influence upon the growth and fruit than either climate or soil. Nurserymen are fully aware of this, and those with whom fruit trees are a speciality take especial care to graft each kind upon a suitable stock—thus we find preference given to the Quince for one kind, another is found to answer best upon the Pear, and others again require a system of double grafting. I have numerous examples of each kind, the flourishing condition of which, and the excellent fruit that many of them have produced, affords ample proof of the fitness of the stocks and the soundness of the judgment exercised in their selection.

The most useful, and therefore the best, forms for trained Pear trees are the pyramidal for orchards and the quarters of a fruit garden; a modified form of the horizontal, derived from the French and termed *Palmette Verrier*, for walls and espaliers; and cordons for the same purpose. We are now so familiar with cordons and pyramids that any explanatory notes about them are unnecessary. I have not yet met with any good examples of the *Palmette Verrier*, and therefore call especial attention to it as the best combination of vertical and horizontal training I have seen. It is a hint from nature applied to practice in the happiest manner, meeting and entirely overcoming the well-worn objection taken to the excessive vigour of the upper branches of trees trained horizontally. The sketch which I append (fig. 20) will make this so plain as to render description quite unnecessary, and I need only add that the lower branches must have a good start so as to reach the highest point of growth simultaneously with the others.

Apart from its great and general utility the Pear has several properties which especially commend it to the connoisseur. The melting juicy flesh, with its rich flavour and tempting aroma, full and pronounced in some, and ranging through many degrees of delicacy in others; and the singular manner in which these and all its higher qualities are subject to local influences,

imparts a tinge of uncertainty to its culture which makes it very interesting.

The subtle qualities which are combined in a first-class fruit, and which the educated palate so much delights in, are also materially affected by the management of the fruit after it is gathered. Let us not forget this last point, for it is one of much importance, a few degrees more or less of temperature affecting the fruit so much that it is in our power to accelerate or retard the period of ripening of many kinds by several weeks; some, indeed, will not ripen at all in our unheated fruit shed. Moreover, it is surprising how wonderfully a warm room will promote the development of aroma and saccharine matter even in ripe fruit which is taken into it from a cold fruit room. Granting the truth of all this, one very naturally is led to ask, Would it not tend to simplify matters if the fruit store itself was heated? But this is objectionable, for the obvious reason that it is desirable to retard the ripening of much of the fruit to maintain a supply as long as possible; a shelf or two in any apartment where a fire is kept in the daytime, affording ample space for successive relays of fruit for immediate use.

The ripening of the fruit and the length of time it will continue good after it is ripe, is also much influenced by the time and manner of gathering it. The early summer kinds should never be suffered to ripen on the tree, but be gathered just as faint traces of changing colour betoken approaching maturity. My own plan is to devote an hour as frequently as possible on fine afternoons to looking over the Pear trees, making several gatherings of each crop, and thus materially prolonging the season even of the little Doyenne d'Été and Citron des Carmes. Of course it will be understood that the duration of these and other early Pears in prime condition must necessarily be brief under the most favourable conditions. Let there be no misconception about this matter. I have known much annoyance to arise from Jargonelles sent to table fully ripe remaining untouched for several days, and then, of course, proving mealy, insipid, and decayed at the core.

Later autumn and winter kinds require equal care. No reliable time can be given for gathering, the earliness or lateness of the season being our best guide. We must take especial care not to gather late Pears too soon. If the fruit parts readily from the branch as it is lifted upwards it is fit

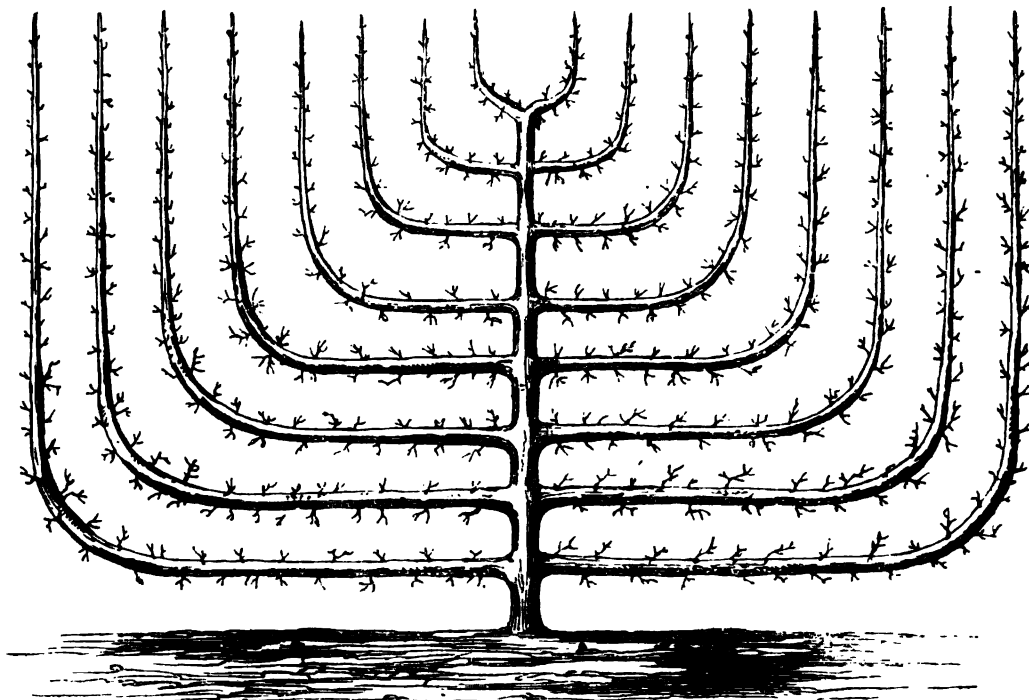


Fig. 30.—PALMETTE VERRINE.]

for storing, and not otherwise. Do not suppose that because some portion of a crop falls that the remainder should be gathered forthwith. Take, for example, that excellent Pear Knight's Monarch, so notorious for its proneness to shed much of its fruit, and yet if we were to press forward the gathering it would be against the dictates of experience and good sense, the unfallen fruit clinging to the branches with such tenacity that most of the stalks will break asunder rather than yield before Nature has given her finishing touch to the fruit. Neither let an early frost or two induce you to take the fruit from the trees prematurely; wait patiently till its hold is so far loosened that it comes away as Nature intended, and you will be well rewarded by fruit of the best quality, sound and excellent in every respect.

Some difference of opinion exists about the cause of that cracking of the fruit which often seriously affects some delicate sorts. Closely examine a crop that is so affected, and you will find it is the fruit near the ends of the boughs which suffers most, and that much of it in the interior of the tree is quite sound, thus plainly showing that it is caused by the exposure of the fruit to cold cutting winds while it is swelling and when its skin is sensitive and tender. A sheltered situation or the protection of walls are the best remedies; portable screens

might also be used with good effect. It is my intention to try some such means for saving the next crop of Red Doyenné, Doyenné Defais, and two or three other first-class sorts which always suffer from this disease.—EDWARD LUCKHURST.

TUBEROUS-ROOTED BEGONIAS.

To Messrs. Veitch & Sons of the Royal Nurseries, Chelsea, and Mr. Louis Van Houtte of the Royal Nurseries, Ghent, the horticultural world is mainly indebted for this valuable class of summer-flowering plants. Their free-growing and flowering capacities, their elegant habits, and varying yet brilliant colours, are a combination of qualities only possessed by our most popular plants, as Pelargoniums, Fuchsias, &c. The new varieties of Begonias which have originated in the two great establishments referred to may justly rank amongst the most useful introductions of recent years.

In the spring, autumn, and even during the winter months, it is not difficult to have conservatories and greenhouses gay with flowering plants; but in the summer months these structures are seldom so satisfactorily furnished as we could desire them to be. Pelargoniums, it is true, of the zonal type are almost continually blooming, and their variety is

rich and their colours are varied; but these plants are so fully represented in the beds and borders of the garden in summer that their effect in the conservatory is proportionately diminished. For indoor decoration during the summer months the ordinary occupants of our stoves, such as Ferns and fine-foliaged plants, are appropriate, and with these plants Pelargoniums do not associate well, but exceedingly suitable are the Begonias now under notice. How effectively they blend with such plants as Palms, Dracenas, Ferns, &c., was demonstrated by Messrs. Veitch in their splendid group of plants at the great exhibition at South Kensington last year.

Considering the rapid increase in the number of varieties of

these Begonias, their extreme usefulness, and their promise of culminating in a hardier race than other types of this genus, is it not an oversight not offering prizes for them, both for the best cultivated plants and the best new varieties? At the great summer exhibitions prizes are provided for Pelargoniums, Fuchsias, Lilioms, Clematisses, Hydrangeas, &c., while no place is found for these Begonias, which are so intrinsically beautiful and so hopeful of producing varieties of still greater value.

Having seen these Begonias "at home" both in the Chelsea and Ghent establishments, and having grown some of them, I can testify to their undoubted worth for summer conservatory,



Fig. 21.—*BEGONIA VESUVIUS*.

greenhouse, and even garden decoration, for, if not absolutely hardy, many of the varieties are sufficiently so to flourish in the flower garden during the summer months. I shall not soon forget the collection of these plants which I saw growing and flowering in the open air at Ghent. The sorts were Agate, Cornaline, Emeraude, Onyx, Rubis, Saphir, and Topaz. Gems, indeed, I thought them, bright, varied, and sufficiently hardy to receive the names which had been given them by the raisers. Since then I believe that Mr. Van Houtte has made still greater improvements, and for some of the varieties has received the gold medal at one of the continental exhibitions.

Equally worthy of recognition are the varieties which have been raised at Chelsea, if, indeed, they do not surpass any other sorts extant. In colour, substance, and profusion of bloom, habit, and hardiness, such sorts as Stella and Vesuvius have few rivals. Both these have received first-class certifi-

cates, the plant of the last-named variety being potted from the open ground for the purpose of being exhibited.

Plants of this type of Begonias were also planted out in Battersea Park last year, and although the summer was by no means a tropical one they grew freely, flowered well, and had many admirers.

Plants, it will be readily perceived, that are amenable to that mode of treatment are not miffy or tender, but are such as are not beyond the means of those who do not rejoice in pretentious gardens with every appointed means for growing tropical plants. A dung frame for starting the plants, and other frames heated by the sun for growing them on, are the only structures really necessary, and which will produce plants most attractive for conservatory or room decoration in the summer and autumn months. The varieties are very dissimilar, as may be perceived by comparing the engraving given

of *B. Veauvius* with one of *B. Stella*, which, with some cultural notes, will appear in a future issue.

The great merits of this free and beautiful race of *Begonias* entitle the plants to be cultivated extensively. They should be as familiar in conservatories during the summer months as are *Pelargoniums* in flower gardens.—W.

GROS COLMAN GRAPE—HAWTHORNDEN APPLE.

YOUR correspondent "EX-EXHIBITOR" invites experienced growers of Gros Colman Grapes in a cool vinery to state their opinion respecting their flavour. I have grown the Vine in a vinery without a stove for many years. We are situated nearly 500 feet above the sea, and in the mountains, where we have more than a usual share of sunless days. Two years the Gros Colman failed to ripen so as to be eatable; but for some seven or eight years it has ripened and coloured fairly. I recollect it was remarked one season that it had an "earthy" taste; but I should characterise it rather as flavourless than as having any bad taste, and it is such a vigorous healthy Vine, so good a bearer, and such an ornament to a dessert, that I do not grudge its room, even in my own limited space. In regard to "EX-EXHIBITOR's" recommendation not to grow late Grapes in a cool vinery, I can only say I have had Mrs. Pince's Black Muscat for many years, and it has never failed to produce an abundant crop, and both to colour and ripen well.

In looking over the new edition of Dr. Hogg's "Fruit Manual," I observe that he especially recommends the Hawthornden Apple as one always healthy and vigorous, and not subject to canker. Now, my experience of it is totally different. I have tried it for many years, and, admiring its useful qualities, have distributed plants of it among the cottagers in my neighbourhood, with one uniform result—i.e., destruction within a year or two of every plant by canker. I have now given it up entirely. The soil here is a light gravelly one, with a gravel subsoil. But I have noticed the same thing has occurred in other localities where a heavy and clayey soil prevailed. I may add that I have tried cutting down, paring away, and removal, to no purpose. My trees are entirely gone, and so are those of my cottage neighbours. With the exception of Ribston Pippin no other Apple cankers here.—C. R.

RANGEMORE HALL.—No. 2.

THE SEAT OF M. T. BASS, ESQ., M.P.

CONTINUING my notes on this complete and excellent garden from page 55, I will glance at the glass structures, not in a detailed manner, but as affording a general idea of the extent of the garden, and as shadowing also its sound management.

We first enter the Peach houses. The extensive ranges of houses devoted to Peaches and Nectarines are of two kinds—lean-to's, the trees being trained to back walls, and span-roofs with the trees trained on trellises. Only the latter demand a note of description. The houses are spacious and lofty, having a sharp pitch, the fruit trellises on either side extending from the ground in front to the apex of the roof overhead. The trees are not trained on the usual fan shape, but the branches are trained horizontally along the wires, similar to the mode generally adopted in training Pear trees on open walls. This mode of training Peaches under glass Mr. Bennett finds has important advantages over the orthodox system. The work of thinning and training of the shoots in summer is simplified and can be done more expeditiously, and much of the common danger of overcrowding is averted. Winter pruning is also similarly simplified, and copious waterings and rich feeding at the roots does not result in exuberant wood growth, but produces healthy trees and fine and regular crops of fruit. The trees are at first trained in the ordinary way, and when they have attained a suitable size the branches are gradually brought to the horizontal position as the permanent mode for fruit-bearing. No trees could look neater than did these. Every foot of wire was occupied, and between the lines of wire there was no useless spray, and thus every inch of space was devoted to a profitable purpose. Mr. D. Thomson trains his Fig trees in the same mode at Drumlanrig with great success, and, as is evidenced at Rangemore, the plan is equally applicable to Peach trees when cultivated under glass, and especially when the glass has a steep pitch; on flat trellises the system would, perhaps, not be so advantageous. All the standard sorts of Peaches are grown. Prince of Wales is much prized by Mr.

Bennett, and perhaps especially so is Raymaecker's, a kind which is not in general cultivation; it is a late Noblesse, and a superior sort. Barrington is considered the best late variety, and is superior to Lord and Lady Palmerston, which are not proving so good as was expected.

Peaches are also to some extent grown on the open walls, and I notice one wall 100 yards in length covered with these trees, and Apricots, to show the simple and efficient mode of protecting the trees on the wall and tender plants on the border by the same set of lights. It is a sort of home-made contrivance, and answers its purpose admirably. The wall is about 15 feet high, and the border about 14 feet wide. On the latter is fixed a continuous box or frame covering the entire border save about 4 feet nearest the wall. At that distance from the wall and parallel with it is fixed the back of the frame, posts being fixed in the ground at convenient intervals, with boards from post to post, some of them opening as shutters to admit air. The back of the frame is about 3 feet in height, the front about 18 inches. Rafters are fixed to support the lights, which are about 9 feet in length. This huge frame is crowded to repletion during the winter with Lettuces, Endive, Cauliflowers, Parsley, and innumerable other plants which need some protection against the severity of the weather. On the approach of spring the lights are no longer needed over these plants, but the trees, which are just then opening their blossoms, need protection, and the lights are simply pushed up, their bottoms resting on the back of the frame, and their tops under the coping of the wall, and the crop of fruit is made safe; the frame—the enclosed border—is then cropped in the ordinary manner. It is a simple and effective combination, and it is not easy to determine for which purpose the lights are the most useful, whether for preserving tender vegetables in the winter, or for protecting the fruit trees during the spring and early summer months. It is adaptable to many gardens, and is an eminently useful contrivance, easily made and not costly.

As may be expected, Grapes are required in large quantities and at all seasons, but Mr. Bennett, by the aid of the means afforded him, is, in hackneyed parlance, "equal to the occasion." For four years Rangemore has not been without Grapes. Lady Downe's Seedling generally keeps in good condition until May, and before that time Black Hamburgs are ripe to continue the supply. To this sterling sort there are four houses devoted; it is a fine range of glass 100 yards in length. The Vines in the first or earliest house are grown and fruited in pots. At the time of my visit they were being prepared for their work, and more promising canes it would be difficult to find. The Vines in the succession houses are planted out. They are six years old and in splendid condition, producing superior Grapes.

But more interesting at the end of October than the nearly empty Hamburg houses were the structures devoted to the winter supply of late Grapes. These are grown in wide and lofty span-roofed houses, the range being nearly 100 yards in length. These houses are amply heated and ventilated, and are well adapted for keeping the Grapes, and also, it must be added, for growing them, for a more regular crop of useful-sized bunches with fine and highly-finished berries is not often seen than the crop now under notice. I have had opportunities of seeing the best exhibitions of Grapes in England and Scotland, and I have not seen Lady Downe's Seedling, Black Alicante, and Muscat of Alexandria in better table condition than at Rangemore. The bunches were not "monsters," but the berries were fine and admirably finished, and for everyday dessert purposes the crop was highly creditable to Mr. Bennett and his assistants.

It also speaks volumes of the power and benefits of surface-dressing the ground with manure. The borders are mainly inside, and had been originally made with some of the unsuitable Rangemore soil. So unsuitable was this soil that on examining the roots they were found in a deplorable state, many of them being absolutely dead. Fresh material was applied to the surface of the border, and especially a very heavy covering of rich stable manure was given, and this, by inducing the emission of surface roots and affording them sustenance, has perfected a splendid crop of Grapes, which but for the rich surfacing must inevitably have been of a very moderate character. Such an example as is afforded by these Vines of the great value of top-dressing the borders with rich manure is of the most conclusive kind, and the practice cannot be too extensively adopted. In these houses Gros Colman was striking by its huge purplish-black berries, but, unfortunately, their

flavour was the reverse of agreeable. The fruit was splendid to look at, but certainly not good to eat. The roots of the Vines have access to narrow outside borders covered with corrugated zinc roofing sheets, which are probably the neatest and most effectual of covers for keeping the borders dry, superseding felt and wooden shutters.

In making new borders Mr. Bennett finds it necessary to use concrete, but takes care that it has a sharp gradient and is in connection with an efficient system of drainage. He uses fresh loam, bones, soot, and charcoal, but the loam is light and not of a "wearing" nature, yet by enriching it with manure and in conjunction with an otherwise good system of culture this fine garden is not likely to be deficient in fine Grapes.

Pines are in great demand, and five spacious pits are devoted to their culture. They are grown in pots, the staple sort being the Smooth-leaved Cayenne. The plants, judging them by their appearance, are evidently grown under a low temperature, and it is more than probable that not an ounce of fuel is wasted over them. The fruit is not exceptionally large in itself, but is large in proportion to the plants. Applying my rule to one of the plants I found that from the soil to the base of the fruit was 9 inches, the fruit itself 9 inches, and the crown 5 inches in height—proportions which speak for themselves. In one house I noticed upwards of ninety plants of that character, so that the winter supply is not likely to be in any degree a scanty one. The succession plants were equally dwarf, sturdy, and healthy. They are generally fruited at eighteen months from inserting the suckers.

I have nothing more to add on the fruit culture at Rangemore except to notice a Fig, the "Negro Largo," which Mr. Bennett considers is one of the finest kinds in cultivation; it was sent out by Messrs. Veitch, and was carrying a heavy crop of handsome fruit of the first quality; and also to note that four thousand pots of Strawberries are forced annually, the best sorts being *Vicomtesse Hérisart* de Thury and *President*.

Of the plant-growing department I may briefly say that a lofty house with a ridge-and-furrow roof is devoted to *Camellias*, with *Maréchal Niel* and other *Roses* covering the roof—a happy idea, the *Roses* giving a profusion of grand blooms, and affording at the same time the necessary shade to the *Camellias*. The latter are planted out—huge bushes full of health and buds. An adjoining house is devoted to *Azaleas*, which are also fine plants in excellent health. At one end of this range is the Heath house, a spacious and substantial structure with stone stages, on which this class of plants thrive so well. The collection is still young, but the plants have made admirable progress and comprise all the choice varieties. This is one of the best houses at Rangemore, and the plants are worthy of the house. At the other end is the Orchid house. This also is a spacious structure, and is filled with Orchids and ornamental-foliaged plants as clean and healthy as it is possible to find them. On the roof are *Allamandas* and a fine plant of the *Vanilla aromatica* with roots 9 feet in length, and *Cissus porphyrophyllus* is effectively trained up the columns. Amongst the Orchids were noticeable some fine specimens of *Cælogryne* in variety, *Odontoglossum grande* with six spikes, and *O. Alexandræ* in extra fine form having a spike with six branchlets and twenty-five blooms. *Lælia anceps* had seven spikes and twenty-one blooms, and *Phalænopsis Schilleriana* was in remarkable luxuriance. *Calanthes* are also well and extensively grown. The above are but a few of the noteworthy specimens in this noble tropical house.

Other houses are devoted to the production of decorative and table plants, which are grown in great numbers. One house is filled with Ferns, another with *Gardenias*, and others with mixed collections of ornamental-foliage plants, amongst which was blooming a splendid specimen of *Cochlostema Jacobiana*. This superb plant is not unlike a huge specimen of the Bird's-nest Fern. Many of the leaves are 4 feet in length and 4 inches in breadth, sheathed at the base and pointed at the apex. From the axils of the leaves the flower-spikes appear. The flowers are rich blue and violet, and are associated with pinkish bracts. For cut blooms they are extremely beautiful, and the plant is most striking and attractive; it has been flowering freely throughout the summer, and is worthy of special notice.

As affording an idea of the extent of the decorative plants required at Rangemore, it may be stated that 1600 Roman Hyacinths are forced, upwards of 600 Dutch Hyacinths, 1200 Crocuses, and other bulbs and forcing plants are provided on the same extensive scale.

The kitchen gardens are well cropped and are uniformly neat, the same care being devoted outside that is so evident under glass. The demand for vegetables forced as well as unforced is very great, and to meet it twelve dozen Cauliflowers must be cut weekly throughout the month of January. Mushrooms are always in demand, and the demand is met; for, save by one failure of spawn, Mushrooms have been out every day for thirteen years. As will be seen, the post of manager here is no sinecure; but in proportion to the skill displayed so is the recompense of the gardener, for Mr. Bass is proverbially studious to reward all in his service who are worthy, and this reward Mr. Bennett has won by his sound practice and assiduous attention.

A notice of this place and the liberal provision which is made by Mr. Bass for his own requirements would be incomplete without a record of his care for the comforts and well-being of his dependants. The gardener's cottage is a model of what such a cottage should be—pleasant, commodious, with every appurtenance to make it convenient, and its occupants feel that it is a home to care for and to cherish. The rooms for the ten young men are also of the most approved kind, each man having a separate bedroom and wardrobe, the foreman further having a separate private room. There is the common dining-room, also a library furnished with books and seven periodicals, including all the gardening papers, and two female attendants are provided to see that the wants of the men are supplied in a proper manner. Surely such privileges demand in return hearty and faithful services, and an active interest in all that pertains to their several duties. They should feel, too, that the credit and reputation of Rangemore is in their keeping, and strive to make themselves proficient in the different branches of their calling.

Further than this care of a liberal employer is this other noble fact, that when by misfortune or old age a man can no longer labour, he is still enabled to live on the system of pensions proportionate to the value of his services. To comment on that generous provision of a generous mind and affluent gentleman were to "gild refined gold," and it may worthily close the notice of this complete and well-managed garden—a garden which everywhere bears the impress of taste and care on the part of the owner and ability on the part of the gardener. The immediate superintendence of Rangemore devolves on Mr. Arthur Bass, M.P., who is a great patron of horticulture, and who inherits the business aptitude, also the kindness and benevolence, which have for so long been attached to the name which he holds and honours. Mr. Bennett is also young in years but old in practice, and the sequel of his success may perhaps be traced to a period of probation under the veteran Mr. Barnes of Bilton, and for a lengthy and important charge in the dual gardens of Chatsworth.

I have to thank Mr. Bennett for his courtesy and attention, and render my acknowledgements of the hospitalities of Rangemore and the shelter it afforded me when the hotels at Burton could only be reached by boat, when the lake fires were extinguished by the flood, and provisions from distant towns were hoisted into the windows of the upper rooms with pitchforks. May I never see the like again!—J. W.

GLASS COPING AND FRUIT CROP FOR 1875.

No. 1.

THE year just passed will long be remembered for its excellent crop of wall fruit, especially of Peaches and Nectarines, and to these two kinds of fruit my remarks will be principally confined. To what is to be attributed the unusually large crop of fruit in 1875? If proper attention is not paid to the trees in the year preceding we cannot ensure a heavy crop of fruit. This was shown in a very marked manner in the year 1874, during which year the wood happened to be well ripened. Prematured ripeness of the wood is sure to end in disappointment; and if we could trace the failures to their true source we should, I am persuaded, find them brought about by the want of moisture at the roots and disregard to the daily vigorous application of the syringe to keep down red spider, &c. Let drought and red spider do their work, and a proper development of buds for the next year's crop is impossible. I am led to believe that failures which may have occurred can be traced to the above causes, by seeing many trees almost quite denuded of all foliage as early as the end of August. The wood was ripe and there were plenty of bloom buds, but they were of an inferior character. The result was, that when spring arrived the buds, instead of bursting into a

fruitful blossom, were cast to the ground, or if enabled to open they were too exhausted to support and sustain the fruit.

It should be kept in mind when deciding upon the merits of glass coping, that no glass coping or protection of any kind can of itself produce a crop of fruit, and a further trial is necessary before we can judge of its efficiency. I would therefore advise those who may have failed in obtaining a crop of fruit under glass coping, if it has only been used for one season, not to condemn it at once, but give it another chance before pronouncing the coping a failure. On the other hand, I advise those who, like myself, have obtained a good crop not to be too confident in attributing their success to the glass coping used during the spring for the first time.

Coping undoubtedly plays a very great part towards giving us a crop of fruit, but I look to other agents to play an equal part. In this instance we notice that the year 1874 was unusually favourable for laying the foundation for good crops, and then the spring following was all that need be desired—mild and calm with but little frost, this mildness continuing from the time when the blossoms were expanding till the "little wee fruits" could be seen peeping through the dwindling flowers. Those trees with abundance of nourishment to feed them, and at the same time forcing-out young leaves to shelter them, were found to carry heavy crops; those, on the other hand, that produced plenty of blossom buds but the trees with health impaired, were unable to support the fruit.

It is only one more instance brought to our notice how the previous year's treatment has to do with the present year's production. I attribute my heavy crop of Peaches and Nectarines not to the glass coping and hanging nets, but principally to the good health of the trees, obtained by unremitting watering, mulching, syringing, and cleaning them through the summer and autumn of 1874. I fear many who saw my trees with such crops, and the glass coping over them, concluded the coping must have been the cause. Perhaps I might have been led away with the same idea had I not other trees quite as heavily cropped without the coping.

I think it should be generally known that glass coping in itself will not produce a crop of fruit; there must be a corresponding care to produce and keep a never-failing vigour in the tree. Starving the roots and protecting the head will avail nothing, but attention to both will do much. Is not a little more care of the wall trees and less to the flower beds occasionally advisable?—J. TAYLOR, *Hardwicke Grange*.

CULTURE OF VINES IN POTS.

ONE can scarcely enter a nursery of any note and refrain from surprise at the immense stocks which are annually provided of potted Vines and Roses. The prince of fruits and the queen of flowers are evidently popular, and there appears to be no fear of disloyalty in the minds of those who devote large houses and acres of ground in preparing a supply of potted Vines and Roses. It is to the former that I will now refer.

Potted Vines, as a rule, which are raised in the nurseries are preferable to home-raised canes, simply because in most private gardens suitable houses cannot be devoted to these Vines, and the canes cannot have the exact treatment that they require. In the few gardens affording the necessary means potted Vines are often grown in a most perfect state. I have seen them good at such places as Frogmore, Burghley, Ramsgate, &c. But in the best places home-raised canes are seldom solely relied on, but a portion are purchased from the nurseries.

But there are many who cannot purchase, yet who like a few—it may be half-a-dozen or so—of potted Vines, and these must be raised at home, and perhaps not under the most favourable conditions. Now when such Vines are grown they are generally required for early Grapes, and to produce these it is above all things necessary that the canes be grown early in the summer and the wood be ripened early in the autumn. Without these three earlier—early growth, early wood-ripening, and early rest—the fourth early, early fruit, is not attainable.

It has become popular to grow the canes from eyes and perfect them during the same season, and where houses are provided sufficiently heated and light the plan may be easily carried out, but it cannot be successful in the absence of those conditions. Those who do not start their vineries or Cucumber houses until February (and they are the majority) cannot well perfect Vines from eyes inserted in the current season, yet

that is the plan which is attempted by many, and after all the attention they give they can only half succeed. People to be successful in any work must adapt themselves to circumstances, and to succeed with Vines under the conditions named they must start now with "out backs." Small canes raised last year, cut down to the soil in early winter, and started in February, will make canes far superior to those which are raised from eyes the same season. They may, perhaps, be in 6 or 7-inch pots, and should be partly shaken out and repotted after the eyes have pushed about an inch, using warmed soil. In a proper temperature they will grow rapidly, and by the end of June will be of the length required.

If growing very freely I never hesitate to pinch the leading shoot, for another leader is formed in a few days, and the stopping "plumps" the lower buds. The best pot Vines I ever produced were stopped at 8 feet, 6 feet, and 9 feet. The Vines in their growing season must have light, and must therefore be trained as near to the glass as possible. A Cucumber pit or house is a very suitable place for raising the canes. They must be syringed freely, using occasionally perfectly clear soft water, which will invigorate them and ensure them against the attacks of insects.

After the growth is made the Vines must not be hurriedly placed in the open air to "ripen their wood," for let it be remembered that it is heat and not cold that is the prime maturing agent.

The soil best suited to Vines in pots is pure loam with a slight admixture of bone dust, say a pound of "dust" to a peck of soil, using also in the compost lumps of charcoal freely. That is all the stimulant needed in the preparing year, but in the fruiting season rich top-dressings must be applied, with supplies of liquid manure after the stoning period.—A FORKMAN.

OLD TREES.

WHEN I was at school I received a castigation, and subsequently a shilling to make me remember the "dressing." I have not forgotten it, the shilling having been an effectual memory-preserver. Mr. Robson rewards first, and then castigates—rewards by praising the completeness of my remarks on page 81, and then in an article of considerable value (page 61), demonstrates their incompleteness. But his reproof is kindly meant and kindly administered, and I will not only endeavour to remember it, but I thank him for it, his great experience and unusual means of observation on this matter being such as to command respect.

Perhaps my tutor imagines I am about to follow his example, and that after "lathering" I shall commence "shaving." Well, perhaps I shall, but nevertheless I thank him in all sincerity for his contribution, and will promise that I shall not differ from him "violently."

In one point I agree with Mr. Robson, and in another place he agrees with me; so far, therefore, we are good friends. He says that an old Apple tree should not be touched with a knife or saw during the last ten years of its life. I cordially agree. I said that thickness in the interior of old orchard trees was generally caused by thinning. Mr. Robson confirms that very clearly. But I said further, that thickly-crowded trees can be made thin by pruning and subsequently disbudbing, and experience has taught me that it can be done beneficially, limiting the practice to trees in a thickly-planted orchard; trees that are singly and exposed being especially excepted.

Twenty years ago I took charge of an orchard of mixed fruits, the trees being one dense thicket, so much so that the fruit, which was small, could only be gathered with great difficulty. Mr. Robson would have removed some of the trees entirely and have left the remainder untouched. They were full-sized but not old trees. I removed some, and the others I pruned, not shortening their branches but removing many, subsequently rubbing-off the after-growths, or the trees would soon have been thicker than before. The improvement was permanent, and only last year I received the congratulations of the owner of the orchard which I "mutilated" in 1854. Of course the trees were not then in their last decade, or I would not have pruned them; neither has the treatment they received apparently shortened their days, but it has improved their fruit.

Apparently the oldest and most decrepid tree was a Ribston Pippin. It was an "old favourite," and was treated like the rest as to pruning. The crooked, curled, knotty branches were taken out, leaving only the smoothest, straightest stems, and these were not shortened. The lichens were killed. A

cartload of soil was taken from its roots and replaced with rich manure, and was soaked with a barrel of very strong "cowyard tea" and sewage. The soaking was continued annually, and the tree put forth new branches and new life, and has since produced crops of highly-coloured and richly-flavoured fruit. I have adopted the same plan with other old trees—that is, I have removed their old scraggy branches, cleaned the rest, and soaked their roots in winter or summer with strong "stuff" with the greatest benefit to the trees—thereby, I believe, lengthening not shortening their days. Mr. Robson will doubtless attribute this to the manure and not the knife, and very likely he may be right, but I think that the manure was guided into channels which would direct it more expeditiously on its strengthening mission than would have been its slower movement through innumerable snaggy paths.

But I have to grapple with my friend on grafting and killing his tree. It appears that he expected it would succumb, and preserved his new sorts by grafting them on other stocks, so that after all it appears he might have saved the tree and the new sorts too, but he preferred to kill. Probably the tree was really too old to suffer amputation, and especially in "forty or fifty" places. Suppose he had amputated in three or four places only—that is, have cut it boldly down to the main forks, it very likely instead of dying would have pushed and grown vigorously. I have seen that to be the case, while trees treated as Mr. Robson has detailed, by topping them as it were, have dwindled away. How is it? I have seen many grafts die, but rarely a healthy stock when cut boldly down.

When a tree is apparently at a standstill it is because there is not a sufficient force of sap to sustain vigour and make new foliage. The roots have lost their propelling power by the too numerous and still obstructed twisted channels dividing and exhausting the sap, and to merely "top" the branches, leaving the still impeded sap-courses, is to aggravate the disease. If a given amount of water is distributed in fifty rills its course will be sluggish, but confine it into one or two clear mains and it will turn a wheel and grind corn. If that is a far-fetched illustration I will adduce another "nearer home." There are now plenty of large Fuchsias in pots which have flowered last year; they are denuded of their foliage, and are, in fact, miniature deadwood trees. Simply top them—that is, shorten each twig or branch moderately; they will push fresh growth, probably sufficiently strong to produce the desired amount of bloom by the aid of rich food. But cut some of them boldly down—instead of mutilating in fifty places amputate in one—in fact, cut off their heads and clear away the hundred sap-courses, thus concentrating the fluid, and note its additional force. The after-growth will possess five, perhaps tenfold greater vigour than will that of the daintily-pruned plant, and the rule holds good with all plants and trees that have the power of pushing dormant buds.

Yet Mr. Robson's is a very useful letter—most willingly do I grant that, and I grant also that Apples are about the worst of all fruit trees to endure mutilation, and it is often best to amputate, otherwise "let them alone."—RADICAL CONSERVATIVE.

NOTES ON VILLA AND SUBURBAN GARDENING.

PRUNING APRICOTS, PEACHES, AND NECTARINES.—It is usual to defer the operation of pruning the above trees until all danger from frost is over. It would require an exceptionally hard frost to do the trees any permanent injury by pruning them, and the chief detriment would be at the places where the cuts were made. No doubt to expose a tender portion of surface, such as a cut would leave, in hard weather would cause the wood to die back an inch or two; and if, as in most cases, there is a wood bud and perhaps also some fruit buds at the extremity, there is then a direct loss upon what was intended at the time of pruning. This is in itself a sufficient cause for delaying the pruning of these somewhat tender trees till there is a prospect of overcoming the danger; and more especially do I think it proper or safer to delay a little after seasons similar to the last, when the wood was imperfectly ripened.

The most sappy portions of unripened shoots are apt to be blackened by the frost; and if they are left at pruning time they will disappoint by producing weakly and imperfect wood, and the flower buds are liable to drop off, to be followed probably by gumming and canker.

Now is the time at all events—unless exceedingly exceptional hard weather sets in—that the pruning of these trees may be done, beginning first with the Apricot, which is the hardest of them and the first to come into bloom. These trees produce

much of their fruit on spurs of some years' growth, the trees also fruiting on the yearling shoots of moderate growth. The former should be spurred-in almost closely, and the latter should be cut back according to their strength and to a wood bud, which may always be distinguished by its shape, which is long and narrow, or pointed more than the fruit buds. In Apricots the buds are frequently situated in threes—two bloom buds with the wood bud in the centre; and again, it is not uncommon to find a young shoot with few if any but wood buds. There must be care in pruning or leaving these, for if they produce little else but wood in the ensuing season no object is obtained, but the strength of the tree is impaired by crowded growths.

In pruning let the face of the cut be in an opposite direction to the bud. It may not make so much difference if the cut is small, but if large the wet is carried into the bud and injury ensues. Leave the shoots at regular distances, but study the vigour and condition of the tree in every way; and if the tree is weakly prune closely, and leave the shoots farther apart than would otherwise be the case. Nothing looks so bad as to see the centre or body of the tree naked. It is scarcely possible to rectify it in after years; the tree must be well started when young, and the same system of pruning followed by whomsoever the work is done.

In Peaches and Nectarines a closer inspection must be made for the sound, ripened, and medium-sized wood. It is the fashion to lay the shoots in too thickly, for there is a twofold object in view—that is, to ensure good-sized, well-developed, and well-ripened fruit, and also to leave plenty of room to lay-in young growth to mature properly for carrying fruit the succeeding year. And again, it may not be wise to condemn a shoot all at once, or to take out an old one till there is a certainty of its place being supplied well by the succeeding one. These are matters that must be left to the discretion of the cultivator. In some parts of a tree there may not be so many shoots as are required, and those shoots that are there should be pruned well back if weak, but if strong a greater length may be allowed them; and in order that the tree should look well and be placed in the best way of filling up all parts alike, let a regulation of its branches take place by the tree being unfastened from the wall and re-nailed. Some do this every year, but in my case and many others there is not time to do it annually, but only when it is really necessary.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

Saving Seeds.—It is no part of the duty of the gardener to save seeds, nor is it profitable to do so. This work is now so well performed by the principal seedsmen, and the seeds can be obtained at such a trifling cost true to name, that it is not worth while to occupy space in the garden with them, and the ripening stalks cause the garden to look untidy. Although we do not recommend either gardeners or amateurs to save their own seeds, there may be exceptions to this in the case of those who are in possession of any new or rare vegetables, or some favourite sort that cannot be obtained in the usual way. It will not do to grow too many different varieties, especially of allied species; for instance, it would not be possible to save seeds of different members of the Brassica tribe in the same garden if they were in flower at the same time, and yet keep them free from contamination. A particular variety of Celery has been saved at Loxford for many years, and the stock has been kept true by selection. The plants intended for seed are planted out on level ground in a sheltered position; about two plants will yield a supply of seeds for several years. One sometimes meets with a selection of Cabbage, Savoy, &c., in a cottager's garden that the best commercial growers would be glad to obtain. The selection has been brought about by years of care, and it is a work of real pleasure to the owner to give a few seeds to his friends. If it is intended to save seeds of any cruciferous plants only one variety should be attempted in the same garden. Plants of the variety intended for seeds should be selected now and planted out in a good position, although it is right to say that the largest produce is obtained from stocks planted in the autumn. The seedsmen have driven us to save our own seeds the first season by charging at the high rate of 60s. a quart for their Peas in some cases.

As the Celery is cleared off, the ground is dug, and without any manuring is in excellent tilth for Onions; the ground should be dug across the trenches. As Coleworts are cut for use the ground is trenched and well manured for Peas and Beans. We have tried many varieties of the latter, but none has been found at all equal to our own stock of Windsor. The Seville Long Pod will be tried against it this year, and however this sort may be received in the kitchen it is certainly the best variety for exhibition. The pods are immense.

Tomatoes have been sown in heat of Hathaway's Excelsior and Orangefield Dwarf Prolific. This last-named sort has done us good service for pot culture every year since it has been let

cut, and notwithstanding the rival claims of *Excoisior* we do not like to part with good old friends. Carter's Green Gage will also be tried this year.

The Seakale has been planted for forcing next season, and seeds will be sown about the first week in March. Rhubarb has also been planted out, and Horseradish; it has been found better not to plant the crowns of the latter so deeply as formerly. The ground is well worked, and manure is placed about 18 inches deep, and the crowns are placed 8 inches below the surface.

Those who have no command of forcing-houses or even frames will have to adopt some scheming at this season to obtain early salads and vegetables. Carrots and Radishes may be sown together in a sheltered corner and under walls. Lettuces and Cauliflowers may be sown; advantage must be taken of fine days for this work. Mustard and Cress or any other small salads may be sown also. For winter salads the common Chicory is not so much used as it ought to be. A few rows sown in the garden and grown to be a good size during summer may be lifted, and successive batches taken into any forcing-house from November onwards will yield a constant supply.

Seeds of an improved Chicory, or at least a nearly allied plant, is being distributed this season. It has been known on the Continent for many years, and is there termed "Witloof," or, in plain English, "White Leaf." We have tasted this salad, and can unhesitatingly recommend it. The leaves are blanched by forcing the plant in a dark place.

PINE HOUSES.

The plants in fruiting-houses are carefully attended to as regards watering. The soil is much compressed in the pots, and owing to their being plunged the under portion retains water when that nearer the surface becomes dry, and this dryness at the surface is still further promoted by those in charge of the plants; they move the surface with a label or something which loosens it. This ought not to be done if the surface is quite loose, for by frequent stirring it is not possible to know when to water, as the loose mould becomes so dry that water passes away into the more solid parts, leaving the surface still dry. The attentive Pine-grower will soon become acquainted with the wants of each of his plants, and will know how much water to apply merely by looking at the surface of the mould. As the Pines are out we turn the plants out of the pots, and by the state of the soil are guided as to the treatment of the others still swelling or ripening off. Generally, no more water is required at the roots after the fruit shows signs of colouring. All the roots of our plants, from the smallest suckers to the fruiters, are retained in a healthy state through the winter months, and all of them have a season of as complete rest as it is possible to give them. We have a great advantage over the old growers who obtained all their bottom heat from deep beds of tan, whereas in these latter days the bottom heat can be regulated almost as easily as the temperature of the house by shallow beds over hot-water pipes.

The Pine house is also one of the best structures for bringing on Dwarf Kidney Beans early. This vegetable is prized at any season, but most of all in early spring when the Covent Garden price is 5s. for a hundred pods. We grow the plants—as has already been described in previous numbers—in 7-inch pots; and if the plants are kept healthy, and the pods are picked as soon as ready, a long succession may be had.

Strawberry plants do very well in the same house. The temperature of 65° is rather too high for them, but the plants, if kept near the glass and ventilators, and are well supplied with water at the roots, take no harm. Black Prince is the sort most to be depended upon. A few plants of Keens' Seedling will be placed in heat this week.

Young plants in the Cucumber house make but little progress as yet, and until the middle of February we do not care to have a higher night temperature than 65°; after that time, with 70° at night and a proportionate increase by day, the plants make good progress.

PLANT STOVE AND ORCHID HOUSES.

The temperature is not yet materially increased, but advantage is taken of fine weather to range the houses a few degrees higher than they were a few weeks ago, the atmosphere being only moderately charged with moisture. Stove plants, and notably *Orobids*, must have a season of rest during the winter months, and this is best attained by keeping them as dry at the roots and in as low a temperature as may be deemed safe. Steaming the houses we do not approve of; this practice was common at a time when plant-culture was not so well understood as it is now. Mr. Macintosh says, "Steaming the stove during winter is a material feature in the best management of such plants, and should be scrupulously attended to, both to soften the atmosphere of the house as well as to prevent the increase of insects, particularly red spider, which is sure to make its appearance in a high and dry atmosphere. The most eligible time for steaming is in the evening, when the flues are hottest, and it is performed by pouring water on them, which generates steam readily," &c. We have given up steaming

altogether, as having a tendency to weaken the constitution of the plants. Our plants are pretty free from insect pests; but those who have mealy bug, thrips, red spider, or scale in their houses should now make a vigorous onslaught against them. Patient washing with soapy water is the best way to destroy all of them; the leaves of many stove plants are tender, and in careless hands are frequently much injured.

Many stove plants are greatly benefited by a little bottom heat at this season, and those gardeners who have not the command of a tan bed cannot compete equally with those who have this advantage. Young plants of various stove plants have been repotted; the pots were well filled with healthy roots. Such as these would start much better in bottom heat, but we have not this advantage.

Some *Orobids* require repotting in cool and other houses. The best time to do this is when the plants begin to make fresh roots, and this may happen any month in the year. With six or eight plants a succession of flowers of *Dendrobium nobile* may be obtained from November until June, the plants at rest being kept in the greenhouse, and a plant should be placed in heat every three or four weeks. No other *Orobid* will stand such rough treatment as this. If it is not possible to remove *Orobids* in flower to a show house specially prepared for them, where the flowers would be longer retained in beauty in a cooler and drier place, they should be kept as dry as possible, and no water should be allowed to fall on the flowers.

Important additions are being annually made to our stock of winter-flowering *Orobids*. What in the whole range of winter flowers can surpass the glowing colour of *Masdevallia Veitchii* and *Sophranitis grandiflora*, or the chaste form of *Odontoglossum Alexandræ*, or the purity of *Oclogyne cristata* and many others? The leaves of our plants had become dusty, which tends to disease. They were washed clean with a sponge and soapy water. —J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

BRIGHTON (Spring Show). March 22nd and 23rd. Mr. G. Webley, Holm Wood, Westbury-upon-Trym, Hon. Sec.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY. Shows April 5th, July 5th, and September 18th.

WESTMINSTER AQUARIUM. April 12th and 13th, May 10th and 11th, May 30th and 31st, July 5th and 6th, October 4th and 5th.

MAIDSTONE (ROSES). June 21st. Mr. Hubert Bensted, Rockstow, Maidstone, Sec.

SPALDING. June 21st. Mr. G. Kingston, Sec.

RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.

SOUTHPORT. July 6th, 7th, and 8th. Mr. E. Martin, Sec.

HELMERSBURY (ROSES). July 12th and 13th. Mr. J. Mitchell, Sec.

BRIGHTON. July 29th. Messrs. C. Jessop & E. Rawnsley, Hon. Secs.

REATON BURN. August 26th. Mr. R. Richardson and Mr. W. Elliott, Secs.

DUNDEE (International). September 7th, 8th, and 9th. Mr. W. E. McKelvie, 26, Euclid Crescent, Sec.

TRADE CATALOGUES RECEIVED.

Charles Turner, The Royal Nurseries, Slough.—*Catalogue of Seeds for the Kitchen Garden, Flower Garden, and the Farm.*

William Bull, King's Road, Chelsea, London, S.W.—*General Catalogue of Flower and Vegetable Seeds.*

Diok Redcliffe & Co., 129, High Holborn, London.—*Illustrated Catalogue of Seeds and Garden Requisites.*

Waite, Burnell, Huggins, & Co., 79, Southwark Street, London, S.E.—*Spring Catalogue of Flower, Vegetable, and Farm Seeds.*

James Dickson & Sons, 108, Eastgate Street, and "Newton" Nurseries, Chester.—*Catalogue of Vegetable and Flower Seeds, Implements, &c.*

R. B. Matthews, 65 & 67, Victoria Street, Belfast.—*Descriptive Seed Catalogue and Cultural Guide.*

Ant. Roosen & Son, Overveen, Haarlem, Holland.—*List of Gladioli, Dahlias, Liliums, Cannas, &c.*

J. Baumann, Nouvelle-Promenade, Ghent, Belgium.—*Price Current for 1876 of Rhododendrons, Asaleas, Camellias, &c.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

INCREASING A LAUREL'S VARIATION (D. D.).—Your Laurel bush, the one half of which is variegated, if you take a scion of the variegated part

and graft it on two or more branches of the unvariegated, would induce that to be partly variegated, but to what extent can only be known by trying.

ANALYSIS OF MILLET (J. W.).—It contains more nitrogenous matter and less starch than rice. Of mineral substances it contains about 4 per cent., and these are potash, soda, lime, magnesia, oxide of iron, phosphoric acid, sulphuric acid, sulphate of lime, chloride of sodium, and silica.

GRAFTING (T. W.).—You will have seen notes and illustrations in our last number. If you need fuller directions you will find them in our "Fruit Garden Manual," which you can have free by post for five postage stamps.

PEARS NOT RIPENING (G. C.).—It is very difficult to understand the vagaries of Pears. You would find Beurré Dial ripen if the trees were planted on the wall. It succeeds on the Quince. We would advise you to gather fruit at different times, placing a label against the fruit in the room, you would then ascertain what was the best time to gather by noticing which ripened best. The beginning of December was very late. All the Pears should be gathered a month before that. If the trees you name do no better next year, head them down and re-graft with better varieties.

POTATOES FOR EXHIBITION (F. M.).—Your soil being heavy is against your having Potatoes in six varieties for exhibition in July unless you have a warm situation. The six we advise are—Veitch's Improved Ashleaf, Bonitful (Fenn), Perfection Kidney (Fenn), Early Market (Fenn), Rector of Woodstock (Fenn), and Snowflake. Plant early, protecting from frosts.

REMOVING OIL PAINT FROM TREES (South Coast).—We presume the paint is only upon the trunks and thick branches, from which it may be removed by scraping them, than which there is no better implement than a "triangle hoe," with a short instead of a long handle, as for drilling. The scraping will not injure the trees if you do not injure or remove the layer of bark next the wood.

VEGETABLES FOR EXHIBITION (A Young Amateur).—Broad Beans—If in the pod, Seville Long-pod; if out of the pod, Windsor. Scarlet Runners—Champion. Cabbage—White, Hill's Dwarf Incomparable; Red, Red Dutch Savoy, Drumhead. Long Carrot—Red Surrey. Cauliflower—Walcheren. Celery—Red Leicester Red (Major Clarke's Solid Red); White, Williams's Matchless White. Lettuce—Cos, Alexander White; Cabbage—Neapolitan. Onion—Reading or the Banbury. Peas—Longest-pod, Superlative and Supplanter. Parsnip—Hollow-crowned Improved. Turnip—Early Snowball. Potatoes—Kidney, Perfection Kidney (Fenn); Round—Early Market, or Rector of Woodstock; American, Snowflake.

CYCLEMANS IN VINEY (T. Byrne).—We do not see so far as you explain your treatment, that it is wrong in any particular, only when the Vines are started the Cyclemans from the shade and heat will be liable to be drawn-up weekly. Could you not remove the plants to a cold frame in the summer?

DRESSING VINE BORDER (F. T., Dublin).—We should prefer the half-inch bones to bone dust, giving a dressing about an inch thick, and mixing it with the surface soil as deeply as you can without injuring the roots; but as you say plenty of bones were used in the making of the border three years ago, a sprinkling of bone dust in March at the rate of 1 lb. per square yard would be an ample dressing, supplementing with a sprinkling of guano in moist weather at the time the berries are thinned, giving 2 ozs. per square yard.

MAKING A SHRUBBERY WALK (Hugh Taylor).—A curved or serpentine path through shrubs is more desirable than a straight one, and to which there is not only no objection in your case, but it is the proper form to adopt. The walk ought to have the soil taken out 8 inches deep, to have 8 inches of rough stones at bottom broken-up, and upon them may be a covering of ashes to give evenness, and then you may add the 2-inch thickness of fine gravel. The tiles should be fixed before the walk is gravelled.

LIGHTING A CONSERVATORY (Bacup).—Suspension lamps or globes having a tube from each projecting through the roof to conduct away the elements of combustion are the most suitable, and in them oil, paraffin, or gas may be burned safely. An ironmonger will procure them for you. In a notice of the conservatory at Rolleston Hall, in No. 768, some globes were referred to as answering their purpose admirably.

ROSE PERLE DES JARDINS (W. S.).—It is a good canary-yellow Rose of hardy vigorous growth. There is but one perpetual white Moss Rose, the flowers of which are neither large nor very double, but they are pure white, produced in clusters and beautifully mossed. Madame Bellenden Ker is a good white H. P. Rose.

CROCUSES FOR POTS (J. K.).—You have been correctly informed. The clumps now appearing above ground will, if potted, flower freely in your greenhouse some weeks in advance of those left in the ground.

VINCA ROSA (E. W.).—These plants may be readily raised from seed, and will flower freely the first year if grown in a brick heat, such as is afforded by a stove or cucumber frame.

TUBEROUS BROOMIAS (J. Allen).—They are a beautiful class of summer-flowering plants of easy culture. See what is said in another part of the Journal. Cultural notes with a selection of varieties will be given next week.

HYACINTHS (Mrs. L.).—The bulbs which have pushed crowns the size of "large acorns" must be taken out of the ashes at once, and be gradually inured to the light, affording them a few days' twilight by a slight covering of moss. They may be grown-on in the frame or greenhouse, keeping the soil regularly moist. When unfolding their foliage too much light and water can scarcely be afforded them.

ALPINE PLANTS FOR POT CULTURE (Wm. Wallis).—*Aretia Vitaliana*, *Campanula garganica*, *Dodecatheon integrifolium*, *Draba glacialis*, *Epimedium pinnatum elegans*, *Eriophorum Lehenchisel*, *Gentiana verna*, *Hutchinsia alpina*, *Linnaea borealis*, *Neraria depressa*, *Parnassia acarifolia*, *Pinguicula grandiflora*, *Pyrola rotundifolia*, and *Ranunculus alpestris*.

STANDARD TREES FOR SOUTH WALL (West Coast).—The most suitable trees for a south wall would be Apricots, Peaches, and Nectarines, trees of which you may obtain one or two years trained of the principal nurserymen. They will give a fair return of fruit until the dwarf-trained trees grow and require their space, when, of course, the riders should be cut away to make room for the permanent trees. You might have a Plum or two for earliness, as Early Rivers and Early Transparent Gage; and a Cherry or two, as Early Purple Gage and Empress Eugénie. Nectarines would not succeed on an east or west wall, on which Pears or Plums would be suitable. Plums would succeed against the east wall. Do not bring-up trench ground for fruit trees, less if the soil is bad at bottom. Gooseberries, if you want flavour, are Early Green Hairy, Green Gage, Champagne, Yellow Champagne, and Warrington

Red. If else and fair flavour:—Red—Hopley's Companion, Guide, and Atlas. White—Ostrich, Sheba's Queen, and Wandering Girl. Green—Angier, Conquering Hero, and Thumper. Yellow—Marigold, Bank's Dublin, and Husbandman. The early part of April is a good time to plant Conifers, or moist weather in late summer and early autumn. Gordon's "Pinetum" may suit you, but it does not treat of shrubs.

DAPHNE INDICA (H.).—Cut-in any irregularity of growth when the flowering is past, but not otherwise prune, and keep rather dry for a month, and yet do not allow the foliage to flag for want of moisture, then report and keep rather moist and slightly shaded during growth, and when the growth is complete afford a light airy situation. Pot sparingly, not giving a large shift, providing good drainage, and a compost of turfy peat and loam in equal parts, with a sixth of silver sand.

SYRINGING CAMELLIAS (Idem).—You may syringe the plants, but only to cleanse the foliage from dust, for if the water come in contact with the expanded blooms it will discolour the petals. We do not syringe ours more than two or three times a year, and to cleanse them of accumulated dust, but sponge the leaves twice a year—in spring before new growth is made, and in October or November, about the middle of which month they commence flowering and continue up to March. We have no blotched leaves, of which the syringing is in most instances the principal cause. Keep the roots well supplied with water, and the foliage dry.

STARTING VINES (A Constant Reader).—We should start the house the beginning of March, which will give you Grapes at the end of July and early in August, and they will hang in good condition for a long time. It will not injure the Vines to start them at that season. The Vines should have a good watering before starting, and the whole of the border brought into a thoroughly moist state. The hose-pipe should be made to pass over the whole of the border every inch of it twice at each watering, and about twice that quantity given for a yard around the stem of each. This watering will suffice until the Vines are in leaf, and then you may water every three weeks until the berries are set, and every fortnight until the Grapes are mainly coloured, when the watering should be discontinued, but an occasional watering given to prevent the Grapes shrivelling, the border being kept from cracking. Your Vines would carry a pound of Grapes per foot of rafter, or fifteen bunches of a pound each, and proportionately less as the bunches are likely to be individually heavier. Early forcing has a tendency to weaken Vines and wear them out, but it is only when forcing is going on at an unnatural season.

NAMES OF FRUITS (J. Jefferies & Son).—1, Blenheim Pippin; 2, Not known; 3, Christie's Pippin.

NAMES OF PLANTS (The Swanage Major).—Yes. It is the plant you name. (O. B.).—*Thysanotus Schomburgkianus* (?); 2, *Peristrophe* (Justicia) species; 3, *Cyrtanthera Pohlana* (Justicia carnea).

POULTRY, BEE, AND PIGEON CHRONICLE.

UNSATISFACTORY POULTRY-KEEPING.

I PLACE before you the result of carefully-kept accounts of the last year's experience with respect to the keeping of fowls—I keep the Dark Brahmas. I have an unlimited grass-run, a good dry house with roosts 18 inches from the ground, lighted by a window which opens to the east. I have fed them thus: Morning—maize, one pint to the dozen. Noon—wheat or barley, dry in summer, boiled in winter and given hot in the same proportion, and scraps. Evening (about an hour before going to roost), wet food, sharps and ground oats in equal proportions 1½ pint to the dozen, made up into balls on January 1st, 1875. I began with twelve hens and two cocks. The result has been, to the 31st of December, 2,028 eggs. Sold 1,290; set 825; consumed 418. Hatched 186. Died 35; sold, 54; consumed 18; on hand 81 for sale. I also hatched 76 Ducks (Aylesbury) from 155 eggs. Lost and died 88; sold 27; consumed 8; on hand 2. I find the cost has been £28 4s. 8d. I have received for eggs and poultry sold (the fowls have weighed from 11 lbs. to 14 lbs. per couple, for which I have charged 8d. per lb. of late, and the eggs from 10d. to 1s. 8d. per dozen), taking the 81 on hand at a proportionate value, £83 14s. 4d. Now, while I am nothing out of pocket it hardly pays for the trouble. I have seen in the Journal statements of the large profits made from poultry. I may be extravagant in the keep on the one hand, with a bad market on the other, and I hope some of your readers will put me right. I perhaps might make something from exhibiting some had I the nerve. My fowls are beautifully marked—well-feathered feet (on two toes). I must relate some peculiarities which I cannot account for. One hen while sitting laid ten eggs; another killed her chicks as she hatched them, and then turned them out of the nest; another after she was loose with her brood attacked every other hen with chickens, taking them to herself until she used to go to roost with about thirty chickens. —A. P.

CORK SHOW OF POULTRY, &c.

THIS was held on the 18th and 19th inst. Nearly all the classes of poultry and Pigeons were well represented, but no bird was of such excellence as to require special notice. In the show of *Cage Birds* the entries were good, and the quality throughout better. In Canaries Yellow some misconception was evident, any bird not marked being considered a Yellow, and some excellent Mealy Belgian and Norwich being passed over on this account. The winners were Belgians, and such birds as would delight the hearts of some of our English fanciers to

see. In any other colour the first was a Silver Lizard, very good in all points, the spangling being about perfect; second a Buff Belgian. Bullfinches were good in colour, the Goldfinches better; but of the British birds the Linnets were by far the best, not a bad bird being shown. In Goldfinch Mules the prizes were awarded to green birds, over the heads of patchy variegated birds. There were some good dark Linnets. Blackbirds, Thrushes, and Larks were very good and well shown, showing great care and attention on the part of the exhibitor. Of Parrots there were but three; first Green and second Grey. In the Variety class a Lemon-crested Cockatoo was first, and a Virginia Nightingale second.

SPANISH.—1, S. Mowbray. 2, W. G. Henry. DORKINGS, *Silver-Grey*.—1 and Medal, S. Mowbray. 2, Mrs. R. Sargent. *Any other colour*.—1, S. Mowbray. 2, J. Barlow. HOUDANS.—1 and Medal, Miss L. Stephens. 2, Rev. V. Holohan. *CRAYE-COUCOR LA FLECHE*.—1, Rev. V. Holohan. 2, Mrs. Holroyd. HAMBURGERS, *Spangled*.—1, L. Stone. 2, W. F. Forrest. *Pencilled*.—1, J. Barlow. 2, S. Mowbray. *POLISH*.—1 and 2, J. K. Miller. *GAME, Black or Brown Red*.—1, W. Johnson. 2, M. G. Cramer. *Duckwing*.—1, J. C. Cooper. *Pile or any other variety*.—1, J. C. Cooper. 2, W. Johnson. *Any colour—Cock*.—1 and Medal, C. F. Staunton. 2, J. C. Cooper. *Hens or Pullets*.—1 and Medal, Mrs. C. F. Staunton. 2, W. Johnson. *GAME BANTAMS*.—1, G. Kings. 2, J. N. R. Pim. *BRAMMAS, Dark*.—1, Miss L. Stephens. 2, Mrs. Hay. *CHICKENS*.—1, W. J. Rumley. 2, A. Conyngham. *Light*.—1, T. O. Atkinson. 2, F. Hodder. *CHICKENS*.—1 and Medal, Mrs. Forrest. 2, E. Scammell. *COCHINS, Buff or Cinnamon*.—1, M. Mahony. 2, Lady A. Lloyd. *Any other colour*.—1, L. Slaney. 2, M. Mahony. *Any colour—Chickens*.—1, Lady A. Lloyd. 2, Mrs. Hay. *ANY OTHER VARIETY*.—1, T. A. Bond (Sultans). 2, W. Hilliard (Black Bantam). *TEKERS*.—1, Capt. Bury. *Poultis*.—1, S. Mowbray. 2, Mrs. R. Sargent. *GEES*.—1, S. Mowbray. 2, J. C. Cooper. *Ducks—Rouen*.—1, F. Robertson. 2, W. H. Massey. *Aylesbury*.—1, F. Robertson. 2, S. Mowbray. *SELLING CLASS—Cock*.—1, S. Mowbray (Dorking). 2, Rev. V. Holohan (Golden-spangled Hamburg). 3, Mrs. Clibborn (Black). *SELLING CLASS—Hen*.—1, G. W. P. Montgomerie. 2, S. Mowbray (Dorkings). 3, J. K. Miller. The Society's silver medal awarded to the winner of the greatest number of prizes in the poultry classes.—S. Mowbray.

PIGEONS.—*POUTERS—Cock*.—1, 2, and Medal, J. H. Hutchinson. *Hen*.—1, J. H. Hutchinson. 2, F. W. Zuboroff. *CARRIERS—Cock*.—1, 2, and Medal, W. A. P. Montgomery. *Hen*.—1, 2, and Medal, W. A. P. Montgomery. *SAINTS—Cock*.—1, J. Rumley. 2, W. F. P. Montgomerie. *Hen*.—1, W. F. P. Montgomerie. *OWLS—Cock or Hen*.—1, W. J. Rumley. 2, W. G. Henry. *TRUMPETERS—Cock or Hen*.—1, J. H. Hutchinson. 2, J. H. Perrott. *JACOBIANS—Cock or Hen*.—1 and 2, J. Frame. *FANTAILS—Cock or Hen*.—1, W. G. Henry. 2, J. H. Perrott. *NUSS—Cock or Hen*.—1, J. Dowling. 2, J. K. Miller. *TURBOTS—Cock or Hen*.—1, 2, and Medal, W. J. Rumley. *MAPIES—Cock or Hen*.—1 and 2, J. H. Perrott. *TURBLES—Cock or Hen*.—1, W. J. Rumley. 2, S. White. *DRACOONS—Cock or Hen*.—1 and 2, J. Dowling. *ANTWERPS—Cock or Hen*.—1, W. Johnson. 2, W. G. Henry. *ANY OTHER VARIETY*.—1, T. A. Bond. 2, W. J. Rumley. *CARRIERS—Young*.—1, W. A. P. Montgomerie. *BARRES—Young*.—1, W. A. P. Montgomerie. 2, J. Dowling. *SELLING CLASSES*.—1, H. L. Tivy. 2, J. Dowling. 3, J. Holway. The Society's silver medal awarded to the winner of the greatest number of prizes in Pigeon classes. W. A. P. Montgomerie.

CAVE BIRDS.—*CANARIES, Yellow*.—1 and 2, D. Ryan. *Any other colour*.—1, F. Brady. 2, W. F. P. Montgomerie. 3, G. W. Johnston. 4, T. Babington. *GOLDFINCHES*.—1, R. P. O'Grady. 2, W. Egan. *LINNETS*.—1, G. J. W. Johnston. 2, R. P. O'Grady. *GOLDFINCH MULES*.—1, P. Cronin. 2, Mrs. W. D. O'Connell. *LINNET MULES*.—1, J. Harris. 2, R. P. O'Grady. *BLACKBIRDS*.—1, R. P. O'Grady. 2, G. J. W. Johnston. *THRUSHES*.—1, G. J. W. Johnston. 2, R. P. O'Grady. *LARKS*.—1, T. Babington. 2, Mrs. Shee. *PARROTS*.—1, W. Johnson. 2, (Grey). 3, D. Morgan (New Zealand). *ANY OTHER VARIETY or CAVE BIRDS*.—1, Mrs. Hodder. 2, Moncrested (Cockatoo). 3, T. Babington. 4, Virginia Nightingale. The Society's silver medal awarded to the winner of the greatest number of prizes in Cave Birds.—R. P. O'Grady.

JUDGES.—Mr. E. Hutton, Pudsey.

DORCHESTER SHOW OF POULTRY, &c.

This took place on the 19th and 20th inst. The Show was an admirable one, and the arrangements in every way good. The birds had to be in the Show by 2 p.m. on the Tuesday, which was very inconvenient to many exhibitors, and we cannot see much use in the arrangement. The Judges were numerous, and performed their work well. The quality they had to adjudicate upon was decidedly above the average of many meetings of the same magnitude. When we reached the place of exhibition the cards were up and the whole building full of visitors, so we hope the undertaking will prove a success in every way.

In Coloured *Dorkings* the cup went to a grand old pen, good in colour and shape. The hen gave one the appearance of being certainly old, but she was very deep and massive. Silver-Greys were a nice class. We liked the cock in the third-prize pen immensely, for his colour and shape were what such a bird should be; but to judge from his comb he appeared to have come out of a fray but lately, which spoilt his chance we suppose of first honours. White *Dorkings* were very nice; the second only inferior to the first in size, both being good in colour and other points. *Cochins* were very good. In Buffs a nice pen won the cup, but we liked the first-prize pair of Partridge or the first Whites quite as well. The winning Partridges were very large and sound in colour, and deservedly took their place. In Whites the winners were well ahead; the first-prize cock being snow white, very massive, and low on the legs. The hen with him was large and abundantly feathered. *Brahmas* were an average collection; the Dark certainly the best. The second-prize hen was very well marked, and excellent in comb. Both the *Brahma* cups went to Creeping, which makes comment on their quality needless. *Spanish* were very good, and here the champion cup for the best pen in the Show came. They were good in every way, and the cock enormous in face; but we almost thought the champion trophy could have gone as deservedly elsewhere. But it is a long time since this breed has won a good champion cup we believe, and the wheel of Fortune should distribute her favours equally. We hear this

cock was the Bristol bird. One of his eyes looks shaky, but he is a grand bird all round. *Games* were admirable. The cup pen of Black Reds were very hard in feather and stylish in shape and head. The cup Brown Red cockerel was exceedingly good in tail and fine in feather. The whole team shown by Messrs. Farquharson and Voisin were very grand and really worthy of the highest credit, being in such good condition and so hard in feather. *Hamburgs* were a good lot, and the handsome prizes brought down the "Lancashire lads." Much as we admired the cup pen of Golden-pencils, we almost liked the second-prize pen as well in many ways, for the hen there was a gem in markings, and her tail was as well pencilled as any other portion of her body. Black *Hamburgs* were hardly as good as we have seen lately; we fear there is a tendency to breeding them coarse. *Polands* made a marvellous class. The cup went to a superb pair of Silvers; and we thought second should have gone to the same colour in preference to the Blacks, although they were an extraordinarily good pen. The cup cock was a wonder in crest and markings, and his mate as good. The whole class was a grand one, and many previous champions were here ousted from their positions. *Malays* were good as a class. Mr. Falle sent some nice Whites, which are rather rare, especially as they were better than usual in colour. Nearly the only pair in the class of the rich colour was Mr. Hinton's. As we have previously stated, the colour of course is simply a matter of choice, but we confess our own fancy is for the rich deep-coloured variety. In *French* a pen of *Cieves* of striking blackness won the cup. They were an adult pair, but grand in all points. The Variety class was a better one than we have seen of late. The winning cards were turned up by Bredas, Andalusians, and Minorcas. Mr. Woodgate had a beautiful pen of *Silkie* very highly commended, their chief points of excellence being crests and leg feather. *Bantams* made a better display than we have seen for some time, especially in the Game, and for a wonder the cup came here instead of going to the Sebrights. The cup cock was very smart in feather and stylish in every way. The winners in Laced were good Silvers, being very clear in markings and small in size. A beautiful pen of Blacks won in the next class, and a very charming pen of Whites second.

The Duck classes were especially remarkable for the specimens of the ornamental varieties sent by Sir William Smith-Mariott. They were shown in faultless condition and feather. The first *Aylesburys* were very large and clear in bill. *Gees* and *Turkeys* were above the average. A very beautiful collection of *Pheasants* of many varieties finished up this section.

The Pigeons were a very good lot, but we were surprised and sorry to find so few entries in many of the classes. The great success of this department at Poole only a few days before seemed to make the meagre display in entries here more remarkable. The *Dragoons* were, however, very splendid, and Mr. Bishop's brown-barred Silvers were well worthy of going to see. The cup Fantails were also a grand pair of Whites as good in tail and carriage as we have seen for some time. Antwerps were pretty fair. We noticed a strong pair of birds (659, Norwood), good in colour (Silver), but they looked too much of the stamp of the Dragoon. In the Variety class, which was one of the best Pigeon classes, a very nice pen of Owls won first, being good in head and very small.

The Rev. G. Hodson awarded the prizes in Dorkings, Brahmas, Cochins, and the Waterfowl; Mr. Tegetmeier in the Polish, Variety class, Malays, French, and some of the Bantams; while we believe Mr. Hewitt took the remainder.

The cups have been forwarded to the winners and the prize-money paid.

DORKINGS—Coloured.—Cup and 1, Henry Lingwood. 2 and 1 local, Mrs. Radclyffe. 3 and local, E. Ponting. *Silver-Grey*.—1, L. Wren. 2, T. Moore. 3, O. C. Greenwell. *White*.—1, O. C. Greenwell. 2, R. A. Botseler. 3, Mrs. Hayne. *BRAMMAS—Dark*.—Cup and 1, Horace Lingwood. 2, Newham and Manby. 3, Lady Chetwynd. 1 local, R. Gower. 2 local, Mrs. Radclyffe. *Light*.—Cup and 1, Horace Lingwood. 2, F. D. Laurie. 3, Mrs. W. C. Drummond. *COCHINS—Cinnamon and Buff*.—Cup and 1, Capt. T. S. Robin. 2, H. Tomlinson. 3, Henry Lingwood. *Partridge*.—1, H. Tomlinson. 2, Hon. Mrs. Sargent. 3, D. Lewis. *Any other variety*.—1, Rev. E. S. Woodgate. 2 and 3, W. Whitworth. *Jun*.—1 local, E. Eper. 2 local, Mrs. Radclyffe. *SPANISH*.—Cup, 1 local, E. Eper. 2, H. Jones. 3, local, W. E. Harris. 4 local, E. Steele. *GAME*.—Cup, 1 local, E. Eper. 2, local, W. E. Harris. 3 local, E. Steele. *Black-breasted Red*.—Cup, 1, Champion Cup, and 2, E. G. Farquharson. 2, J. Voisin. *Brown-breasted Red*.—Cup and 1, J. Voisin. 2 and 3 local, E. G. Farquharson. 3, H. Browne. *Any other variety*.—1, E. G. Farquharson. 2, J. Voisin. 3, H. Browne. *HAMBURGERS—Gold and Silver-pencilled*.—Cup and 1, W. K. Tinker. 2, H. Beldon. 3, H. H. Thompson. *Golden-spangled*.—1, H. Beldon. 2, H. E. Jones. 3, S. H. Harris. 1 local, W. Meader. *Silver-spangled*.—1, W. Adams. 2 local, Mrs. E. Farquharson. *Brown-breasted Red*.—1 and 2, S. Beighton. 3, W. M. Cardell. *Any other variety*.—1, S. Beighton. 2, F. S. Hookaday. 3, S. Beighton. 1 local, H. S. Handford. *Gold and Silver-laced*.—1, C. H. Foote. 2 and 3, M. Leno. *Any other variety*.—1, W. H. Shackleton. 2, H. Beldon. 3, T. Bush. *SELLING CLASS—Dorkings, Brahmas, or Cochins*.—1, H. Tomlinson; 2, Whitehead. 3, F. D. Laurie; H. Johnson. 4, Mrs. Hayne; T. Leecher. *Any other variety*.—1, H. Yardley; 2, Bush. 3, E. G. Farquharson; 4, Rev. E. Handley. *ANY OTHER VARIETY*.—1, J. K. Fowler. 2, J. K. Fowler. 3, J. K. Fowler. 4, J. K. Fowler. 5, J. K. Fowler. 6, J. K. 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1 local, E. Ponting. 2 local, Mrs. Radclyffe. *Black East Indian*.—Cup and 1, S. Burn. 2 and 3, J. W. Kelleway. *Any other variety*.—Cup, 1, 8, and 1 local and Cup, Sir W. Marriott, Bart. 2 and 2 local, C. H. Mayo. *Selling Class*.—1, H. Feast. 2, T. Moore. 3, J. Hodges. *TURKEY*.—1, Rev. N. J. Ridley. 2 and 1 local, E. Ponting. 2 and 3 local, Mrs. Radclyffe. *GESE*.—1 and 1 local, Mrs. Radclyffe. 2 and 2 local, E. Ponting. 3, J. R. Fowler.

PHEASANTS AND PIGEONS.—*Pheasants*.—1, Sir W. Marriott, Bart. 2, Mrs. W. C. Drummond. 3, W. O. Drummond. *Carriers*.—Cup and 1, H. Yardley; 3, A. Heath; H. Jacob. 1 local, H. S. Hansford. *Poulters*.—Cock.—Cup and 1, H. Pratt. 2, A. Heath. *Hens*.—1 and 2, H. Pratt. *Tumbler*.—Cup, 1, and 2, H. Yardley. *Barbs*.—1, H. Yardley. 2, P. H. Jones. 2 local, C. Parsons. *Turbit*. 1, C. A. Grafer. 2, P. H. Jones. 2 local, C. Parsons. *Jacobins*.—1 and 2, J. Andrews. 1 local, C. Parsons. *Fantails*.—Cup, 1, and 2, J. F. Lovelidge. 1 local, Mrs. C. Parsons. *Nuns*.—1, Miss A. Brooks. 2 and 2 local, C. Parsons. *Anticreps*.—1, J. J. Bradley. 2, G. Colson. *Dragoons*.—Silver.—1, 2, and 1 local Cup, W. Bishop. 2 local, W. Osmond. *Blue*.—Cup and 1, R. Woods. 2, W. Bishop. *Red or Yellow*.—1 and 2, R. Woods. *White*.—1, 2, and Point Cup, W. Bishop. *Any other distinct variety and local*.—1, F. Braund (Owls). 3, H. Yardley. 1 local, Mrs. C. Parsons (Ice). 2 local, O. C. Farrer (Erlbachs). *Selling Class*.—1, Mrs. W. C. Drummond. 2, W. R. Rootes. 3, C. Parsons.

THE WONDERS OF A BEE HIVE.—No. 8.

THE first fortnight of the life of a queen bee is very eventful, often very tragical and calamitous. More queens are hatched than the exigencies of hives require. The supernumeraries are destroyed either in royal battles or by the community before they are many days old. Even after all the supernumerary queens have been killed and the rest enthroned, every one in its own hive, young queens are exposed to danger during the honey-moon season of their lives, which happens before they are fourteen days old. Many queens never return from their first tours. Some of them may be drowned in ponds and rivers, some caught by birds, some miss their way home. We cannot tell how they are lost. Much of their life indoors is surrounded by mysteries which man cannot penetrate, and his eye cannot follow them over fields and forests outside.

All queens that have been successful in their outdoor excursions have the maternal duties of their hives to perform. The office of a queen is no sinecure. What common working bee is so heavily taxed with toil? What life so laborious, monotonous, and exhausting as that of a queen bee? Where can a life be found more exemplary for patience and perseverance? Four years of heavy work unflinchingly met! No holiday—no pleasure excursion for a queen bee! No day of rest does she ever seek! And who dares affirm that she ever has one hour of sleep?

Queens commence laying when they are about ten days old, generally speaking, and continue to lay during the summer months till the time of their decease—viz., when they are four years old. A few die when they are three years old. Their fertility is one of the wonders of bee history. We are not aware that it has been accurately ascertained how many eggs a queen lays every day. So far as my own experience goes it leads me to put the number beyond 2000 daily. Langstroth put it between 2000 and 3000 daily. Some experiments made in America indicate that our estimate or guess is much under the number. One writer informs us that through a glass hive he saw a queen laying eggs at "the rate of six a minute." If she kept on at this rate 5000 would be laid in twenty-four hours. Even 2000 eggs laid daily for months by one queen seem a marvellously large number. The prolific character of queen bees has not been sufficiently pondered by many apiarists, otherwise their hives would have been constructed much larger. More than half the eggs laid by queens are destroyed for want of room to set and hatch them in the present race of hives.

Have queens the powers to repress egg-laying? Can they lay and cease to lay when they like? I have never seen any evidence indicating that they could lay or cease to lay when they like, or even to lay according to the wants of their hives. Dr. Bevan was wrong in stating that queens have two great seasons of egg-laying—viz., one before swarming and another after swarming. He fancied that queens stopped laying before swarming and recommenced afterwards. That is erroneous, for queens continue to lay up till the moment of swarming, and they will lay eggs on the flight board in the act of swarming. If a first swarm be hived amongst empty combs we invariably find that the combs are speedily filled with eggs. There is no cessation of egg-laying at the swarming season. One of the easiest ways of finding how many eggs a queen bee lays is to put a first swarm into a hive of empty combs for thirty-six hours and then count the eggs laid during that time. In seasons of inclement weather there sometimes seems to be a cessation of egg-laying. No eggs are set—the combs become empty. This is a very common occurrence, and has led some honest men to think and say that the queens have become barren for a time. I have not been able to endorse this opinion, for I find that in hives with plenty of honey in them egg-laying is seldom discontinued during the multiplying seasons.

In hives on the borderland of starvation during inclement weather we find that eggs are not set, and often much of the brood that is half-hatched is torn from the cells and cast out of the hive. The bees anticipate a famine and wisely cast out their young. The instinct that causes them to cast out their young may teach them to destroy eggs, and thus save them-

selves from the burdens of an accumulation of brood. I do not say that cold inclement weather does not influence the productive powers of queen bees, as it certainly does in the case of fowls; but I have not found material enough in the evidence adduced by some writers on this question to convince me that queen bees have ceased to lay when eggs are not set.

How the queens or bees know male from female eggs is a wonder to many. Male eggs are laid or set in drone cells, and female eggs in worker cells. Can a queen bee, by a mere act of her own will, determine gender before the egg is laid? If not, how comes it to pass that each kind of eggs are placed in appropriate cells? If the queen cannot determine and destine the sex of the eggs, which "great bee" knows the difference between male and female eggs, and separates the one from the other after they are produced? Such questions lead us into a wilderness of thickets, and leave us to find our way out as best we can.

After the first fortnight of her life a queen bee discharges the duties of maternity. The drain on her strength by such maternal functions must be very great. Some one has said that a queen is an enormous eater. No one will dispute this. Constant feeding and generous food are necessary to keep her at work. Strange that a bee of fragile build should lay so long and well. "You must admit that a queen bee has one airing and holiday once a year—when the bees swarm." Yes, she does go with the swarm; but it cannot be called a holiday or pleasure excursion. She is a creature of circumstance then and follows the majority.

One of the wonders of a bee hive is the fact that the inability of a queen to fly far is taken into consideration by the community before they emigrate. Old and pregnant queens go with first swarms, which settle or alight on branches near home. First swarms seldom go many yards from the old stands. Second swarms or casts have young unfertilised queens, and these often go farther from home. First swarms with old queens are afraid to depart if the weather be at all threatening; second swarms are less particular about the weather or the hours of swarming.

Though the queen leads a life of drudgery and monotony she leads it most contentedly amid an affectionate and admiring people, who study her every want and remove every pebble out of her pathway. She is the highest personage in the realm and receives the greatest homage. Disloyalty finds no place within the sphere of a bee hive. A queen lives to see generations of her own progeny come and go. The time of her dotage arrives—the doctor sees that her end is nigh—a gentle push will put her aside, for she staggers in her gait. The bees, knowing all this, make preparations for her dethronement by rearing young queens, one of which must be chosen as her successor.—A. PATTINGREW.

EKES VERSUS SUPERS.

A QUESTION from a correspondent on the subject of ekes, which has been forwarded to me by special request of the writer, gives occasion for a few remarks on the subject generally. I am the more induced to write upon this question because I have written on both sides during the last year or two in the pages of this journal, and I may be charged with uttering an "uncertain sound," than which nothing can be more disastrous either in regard to religious doctrines or (to pass by a bound to the humbler region of) bee economies.

Latterly I have said a good deal touching supers, and your readers are in no doubt as to my opinion of the superiority of these, in point of profitable management, to the old-fashioned use of ekes. But this depends a good deal upon the relative nature of quantity *versus* quality in the production of honey. If you want a great quantity of honey and are not particular as to its coarseness, and if you aim at honey in the jar rather than honey in the comb, then no doubt a judicious use of the eke system of space-enlargement will be your best policy, and the plan suggested by your correspondent "F. J." will be found very practicable. We should agree with him entirely if, instead of saying that working bees with ekes is the best plan of "making money," he would write of "making honey;" for I believe that at least a third of the quantity made by the use of ekes if collected in supers would make more money. His plan is as follows: He would use plain wooden boxes, not bar-frames, "16 inches square and 4 inches deep." I should prefer at least 6 inches for the main box. "F. J." continues, "When you have a swarm in one of these put an eke to it, which will make the stock box then 9 inches deep. As soon as they have this full and want room add another eke same size, and if the season allows them to fill this add another. Supposing this to be done, the hive would be 18 inches deep. Each division should have an adjusting board between, so as to keep the combs separate in each." At the end of the season he proposes "to drive the bees down to the bottom of the hive with a puff of smoke," after removing the top board of all on the uppermost box, "and taking off the top box or two, which can easily be separated without breaking the combs;" a loose top could then be screwed on

at once before the bees have time to ascend, and at the end of the season, or earlier if the bees have not a sufficient store of honey, they could be "fed up to it." This is no doubt a very excellent plan, nor can we see why it should fail in its object, that object being a large quantity of honey. Some of it no doubt would be of first-rate quality, because it would be stored in a new hive by a swarm of the current year.

I would merely suggest that guide combs should be affixed to the upper part of the boxes in each case, so as to induce the bees to work their combs throughout from top to bottom in the same direction; also narrow apertures 6 or more inches long and half an inch wide should be made to run between the combs at the sides (not in the centre, however) to render as easy as possible the access of the bees to every part of the hive. If your correspondent carries out his plan of management as detailed here in the coming summer, we shall all be very glad to hear of the result. He may find some detail capable of improvement in the course of his practical experience. We should expect a large harvest of honey of various quality, but we think that the following year it would be better to vary his management by the use of supers over the surviving stock hive, as it would no longer be what it was the first year—namely, a swarm in a new box with perfectly fresh honeycomb. The plan seems eminently suited to swarms of the first year.

It will have been observed that I suggest the narrow passage communicating from box to box to be at the sides and not at the centre of each; this is with a view to economise and concentrate the heat necessary for the brood at the centre of each box, and to check as much as possible the ascent of the queen to the upper boxes after she has once descended to a lower region. This will tend to the greater use of the upper boxes for honey, and to its greater purity.—B. & W.

OUR LETTER BOX.

BLACK HAMBURGERS (Bosco).—The Black Hamburgs are as good layers as the others. We cannot tell you who is the best person to apply to. We advise you to look in our advertising columns. You will find all the best yards represented there.

HENS DYING (Raven).—Your feeding is at fault. You must discontinue potatoes and Indian meal. The former always causes diseased liver, and the latter makes fat only. Procure some ground oats or barley meal, slake them with water, or milk if you have it, and feed with it morning and evening. The mid-day meal may be whole barley, and after the fowls are restored to health you may give Indian corn whole three days per week. We have never been able to make our fowls eat Indian meal.

PULLER'S LEGS USELESS (A Subscriber).—We are disposed to think your pullet is egg-bound. That has the effect of causing apparent paralysis. The cure is to enable her to lay the egg. Pulletts only are subject to this malady, and only with the first two or three eggs. The cure is to pull out a soft wing or a tail feather, to dip it in oil, and to pass it down the egg passage till it meets the egg. It will be laid immediately. You must not attempt to help its passage with the fingers, lest you break it in the pullet. That is a very serious case.

ARTIFICIAL MOTHER (W. W.).—The Americans use a piece of sheep-skin nailed on a board woolly side upwards, and the board supported so far from the floor that the chickens can creep under and have their backs among the wool.

PAINEY POULTRY SHOW.—Mr. Sample of East Kilbride informs us he obtained the special prize in the Braham class.

AGES OF EGGS FOR SITTING (Agnes).—We prefer eggs not older than a fortnight. Eggs much older have produced thrifty chickens, but it is certain as a general rule that the older the egg the weaker its progeny. To keep the eggs until you are ready for them put a box in a dry place in your kitchen, not too near the fire; partition the box, so as to hold separately the different eggs of the various sorts; let bran be well dried in the oven and put into the partitions, and cover the eggs with the bran as they are placed in; and this should be done soon after they are laid.

AN AFFLICTED PARROT (J. T., Isle of Wight).—The symptoms so fully described in your letter are sufficiently conclusive as to the state of your Grey Parrot. The peculiar twisting of its head and neck, the film over the eyes, and the plucking of the feathers, will most likely be followed by occasional falls from the perch and violent fits. When the latter occurs supply it with a few drops of weak brandy and water. The Parrot is suffering from vertigo (an affection of the brain), which is so connected with the vertebra of the neck as to bring about the painful-looking contortions of the neck in particular. We have ourselves lost Parrots in this way, and likewise know of numerous other instances of deaths occurring. The complaint is attended with difficulty of swallowing and occasional vomiting. Your general treatment of the bird we cannot complain of, excepting that Parrots should be sparingly supplied with flesh meat, especially when in a raw state. All that you can now do is to give the bird a tepid shower bath every other day, after which dry the bird's feathers gradually before a fire. Administer three or four drops of castor oil twice a week, which will tend to check the offensive smell you complain of. Keep the bird upon a soft diet (which will be easier for its throat), such as bread-and-milk and Indian corn well scalded and soaked in milk. Discontinue flesh meat and hempseed. This treatment will only tend to prolong its suffering life. With such a faint hope of recovery it would be humane to terminate its misery.

DRIVING BEES (J. E.).—To drive bees from common hives when they are to be preserved and the honey and combs taken. Early in autumn, or say in the month of August, blow some smoke from old ex-duroy or cotton rags amongst them, turning the hive upside down or flat on its crown, placing an empty hive about the same size on and over it month to month, and rolling a cloth of any kind round the junction to keep the bees from escaping or coming out. The drumming or driving now begins by beating the sides of the hive with both hands. This beating on their hive while they are confined confounds them and causes them to run from the bottom hive as fast as

they can. They are completely mastered and sowed; and in a panic-stricken condition they abandon their brood and everything cared for before, and seek safety in flight. About fifteen or twenty minutes of drumming drives all aloft. There is no time allowed for rest or play after the beating begins. From beginning to end the drumming should be continued, not giving the bees time to think or turn round. And when the bees are up they should be lifted off the old hive and placed on its board. All this may be done in a hive of any size or strength in less than twenty minutes. If a few strongmen are left in the bottom hive they may be driven out with a feather. As it is very important to run the honey before the combs cool we generally destroy the strongmen speedily with a puff of powder or a small bit of brimstoned-rag. We like to have all the honey run from the combs by the end of an hour from the time we commence to drive. As "object lessons" more speedily convey information and impress the mind than the A B C of teaching, I often wish that the bee-keepers of England were by my side for a week to witness how easily and speedily everything is done. If "J. B." and others will only take the above A B C lesson and make it into an object lesson in their own garden or apiary they will require no more teaching on this subject. In cold weather bees do not run so readily as in warm weather. When bees have to be driven in cold weather we find that by sprinkling them with syrup fifteen minutes before the driving begins they run very well.—A. PATTISON.

Pres (H. C. E.).—The most useful book is "Domestic Pigs," by H. D. Richardson.

METEOROLOGICAL OBSERVATIONS.

GARDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain.
1878.	Barom. at 3 p.m. and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at ft.	Shade Tem- perature.		Radiation Tem- perature.			
Jan.		Dry.	Wet.			Max.	Min.	In sun.	On grass		
We. 19	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Th. 20	30.127	48.0	39.9	S.W.	57.5	47.0	58.1	73.5	53.9	0.01	
Fr. 21	29.898	45.0	44.0	S.W.	59.1	45.9	43.2	54.1	41.2	—	
Sat. 22	29.677	45.1	44.0	N.W.	44.2	46.7	43.2	47.8	41.6	0.018	
Sun. 23	30.176	55.1	55.7	N.	40.2	41.4	54.0	78.5	53.0	—	
Mon. 24	30.474	55.9	54.9	W.	57.3	45.5	59.6	60.6	57.1	—	
Tu. 25	30.479	42.8	41.1	S.W.	58.0	45.5	54.1	75.4	53.4	—	
Wed. 26	30.488	54.0	54.0	N.E.	58.5	45.5	53.1	50.0	48.8	—	
Means	30.103	49.1	38.7		58.7	45.6	56.	61.5	54.0	0.029	

REMARKS.

19th.—Dull morning; fine two or three hours in the middle of the day; but rain before 5 P.M., and cold at night.
20th.—Grey and rather windy in morning; fair but not bright in the middle of the day; no sun, but the pavement drying-up towards night.
21st.—Dull, slight rain at 9 A.M., and more or less all day; heavily at night, with high wind and hail.
22nd.—Wind went down about 8 A.M.; very fine at nine, cloudy for a short time about 1 P.M.; but on the whole a fine bright day.
23rd.—Very fine all day, and a starlit night.
24th.—Fine morning, rather less so about 1 P.M., but a fine afternoon and evening.
25th.—Very dense fog in the morning, continuing all day; the sun endeavoured to shine through it in the middle of the day for a short time, but it came on again very soon.

No especial feature during the week. The heavy snowstorm which occurred in the midland counties being merely represented here by a sharp hailstorm about 11 P.M. on Friday.—G. J. SYMONS.

COVENT GARDEN MARKET.—JANUARY 26.

A BETTER tone has pervaded the market the last few days, and best goods are readily cleared at last week's prices. Large quantities of St. Michael Pines are still arriving in good condition, as many as seven hundred having been sold last Friday alone.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1	0 to 1	0	0	0
Apricots.....	1	0	0	0	0
Cherries.....	1	0	0	0	0
Chestnuts.....	1	0	0	0	0
Currants.....	1	0	0	0	0
Black.....	1	0	0	0	0
Figs.....	1	0	0	0	0
Filberts.....	1	0	0	0	0
Cobs.....	1	0	0	0	0
Gooseberries.....	1	0	0	0	0
Grapes, hothouse.....	1	0	0	0	0
Lemons.....	1	0	0	0	0
Melons.....	1	0	0	0	0
Mulberries.....	1	0	0	0	0
Nectarines.....	1	0	0	0	0
Oranges.....	1	0	0	0	0
Peaches.....	1	0	0	0	0
Pears, kitchen.....	1	0	0	0	0
Pears, dessert.....	1	0	0	0	0
Pine Apples.....	1	0	0	0	0
Pistons.....	1	0	0	0	0
Quinces.....	1	0	0	0	0
Raspberries.....	1	0	0	0	0
Strawberries.....	1	0	0	0	0
Walnuts.....	1	0	0	0	0
ditto.....	1	0	0	0	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	1	0	0	0	0
Asparagus.....	1	0	0	0	0
French.....	1	0	0	0	0
Beans, Kidney.....	1	0	0	0	0
Beet, Red.....	1	0	0	0	0
Brussels.....	1	0	0	0	0
Cabbage.....	1	0	0	0	0
Carrots.....	1	0	0	0	0
Cauliflowers.....	1	0	0	0	0
Celery.....	1	0	0	0	0
Coleworts.....	1	0	0	0	0
Cucumbers.....	1	0	0	0	0
Endive.....	1	0	0	0	0
Fennel.....	1	0	0	0	0
Garlic.....	1	0	0	0	0
Herbs.....	1	0	0	0	0
Horseradish.....	1	0	0	0	0
Leeks.....	1	0	0	0	0
Lettuce.....	1	0	0	0	0
French Cabbage.....	1	0	0	0	0
Mushrooms.....	1	0	0	0	0
Mustard & Cress.....	1	0	0	0	0
Onions.....	1	0	0	0	0
Parsley.....	1	0	0	0	0
Parsnips.....	1	0	0	0	0
Peas.....	1	0	0	0	0
Potatoes.....	1	0	0	0	0
Kidney.....	1	0	0	0	0
Radishes.....	1	0	0	0	0
Rhubarb.....	1	0	0	0	0
Salads.....	1	0	0	0	0
Scorzonera.....	1	0	0	0	0
Seakale.....	1	0	0	0	0
Shallots.....	1	0	0	0	0
Spinach.....	1	0	0	0	0
Tomatoes.....	1	0	0	0	0
Turnips.....	1	0	0	0	0
Vegetable Marrows.....	1	0	0	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	FEBRUARY 3-9, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	h.	m.	
3	Th	Royal Society at 8.30 P.M.	45.0	30.7	37.9	7	38	4	50	10	15	1	30	3	14	3	84
4	F	Geologists' Association (Anniversary) at 6 P.M.	45.0	32.8	39.9	7	37	4	51	10	42	2	59	9	14	9	85
5	S		45.7	33.5	39.6	7	35	4	53	11	23	4	25	10	14	14	86
6	Sun	5 SUNDAY AFTER EPIPHANY.	46.5	32.6	39.6	7	33	4	55	0	21	5	41	11	14	19	87
7	M	London Institution at 5 P.M.	46.9	33.0	39.9	7	32	4	57	1	40	6	38	12	14	23	88
8	Tu	Royal Horticultural Society—Annual General Meeting	46.6	31.0	38.8	7	30	4	59	3	10	7	17	13	14	26	89
9	W	Society of Arts at 8 P.M.	45.3	30.9	38.1	7	28	5	1	4	22	7	49	14	14	28	90

From observations taken near London during forty-three years, the average day temperature of the week is 45.7°; and its night temperature 32.2°.

THE FORMATION OF A CARRIAGE OR OTHER ROAD.



MOUCH as we are indebted to our early ancestors for the very substantial way in which they formed their roads—roads which even to the present day seem to bid fair to witness the decay of others that are many centuries their juniors—there was nevertheless something in old Roman roads which would not have met the requirements of the present generation. Still we may wonder that the Romans were able to accomplish so much as was done, their massive walls and solid buildings, as well as their most substantial causeways, crossing the country in various directions; but then it must be remembered that all travelling was done in those days without the aid of wheel carriages. Horses, bullocks, and foot travelling were the modes adopted at that time, but with the advance of wealth other modes of travelling were required, and roads of a kind on which wheel carriages could be used at all seasons had to be provided. Coeval with this improved state of road-making it was discovered that curving round the base of a hill was not any longer than going right over the top of it; for notwithstanding the assumed theory that the up-and-down-hill road is the straightest, it is in reality no straighter than the curved one. In practice a considerable space is often sacrificed, and as it frequently happens for a gardener to have to set out a road through very difficult ground, a few plain hints may perhaps be of some service to those who have not had much experience in such work.

Assuming that a carriage road is wanted to unite the mansion with the principal highway, the route being through a dense coppice. The ground is very uneven, perhaps, along the side of a river or stream, and with now and then very steep banks. On a place of this kind considerable excavations will be required, but some judgment will often lessen this by the designer of the road making himself thoroughly acquainted with the whole of the ground before a spade or axe is put to use. The ground should be gone through several times, and if the bed of the stream be handy it forms a very good guide, and a rough idea of the ascents and descents to be made will be thus obtained without the aid of any instruments whatever. Instruments are very useful, but the plain man can very often do very well without them, the eye enabling him to judge of the difficulties in the case, and to balance the ultimate result with the labour entailed. While the work is in hand let it be well done—that is, let a proper foundation be made, with gradients of a kind that are not likely to be found fault with hereafter, for the complaint—"that it is a pity that such and such an excavation or embankment was not made at first"—ought never to be heard; for be it observed that a road of the kind in question ought to be done for perpetuity; and where there is a necessity for excavation, which in all hilly ground is sure to be the case, it is much

better not to begrudge the cart or wheelbarrow work at first, as it cannot well be done afterwards.

In the formation of a road along the side of a steep hill, with irregular gullies crossing its course, a greater or less amount of excavation of the one side and embankment on the other is indispensable. Care, however, ought to be taken at the beginning that the proper level, if we may call it so, is started with. More than three-fourths of those not having had experience in such work start too deep, or in other words, they do not give sufficient credit to the filling-up qualities of the material they excavate, the result being that they find they have more than they have room for. This arises from not remembering that a cubic yard of solid excavation does the filling-up of quite 1½ yard of embankment; consequently the material is not all wanted that ought to be removed. Some little measurement will obviate this; but many experienced people disregard such measurements, and judge by the eye how much filling-in a certain cavity will take, and how far an excavation of a certain depth will go towards that object. Of course everyone knows that there is a sinking of embankments, and what takes place during the time the works are in hand must be made up; heavy rains and carting will tend to consolidate the mass. Where bridges are needed they ought of course to be erected before the groundwork approaches them. In order to ascertain the gradients some rough survey ought to be made and levels taken. If, for example, the ascent be 120 feet in half a mile, a very little knowledge of figures shows that if excavation could be carried carefully out from end to end there would be an inclined plane of an easy rise of 1 foot in 22. A gentle and easy rise, no doubt, but it is not always easy to excavate the ground so as to have such a uniform rise, as very often the conformation of the ground almost compels a part of the road to be much steeper and a portion even level or with little rise at all. This state of things must be met as it best can, taking care in all cases after once commencing the ascent not to descend again if possible. Although there are plenty of roads that ascend the hill with a rise of 1 in 15, and some as steep as 1 in 12, it is better to spread the ascent into more space if possible; 1 in 18 being fair trotting ground that may be taken as a guide.

Now, in carrying a road through a coppice it is good practice to cut with a spade a series of small level spaces all along the intended line of route at about 50 yards from each other, or further apart if they can be seen readily; an engineer's level will then enable the respective heights of each to be ascertained. The whole should be committed to paper so as to give the profile of the ground, and the places where it is prudent to excavate and where to be filled up will show themselves at once. In levelling, a knowledge of geometry is no doubt valuable, but there are plenty of cases where such instruments as spirit levels are not cared for, the sole guide being the eye, aided by the judgment necessary to grasp quantity, and, as a friend once expressed it, see into mountains.

Where the excavation is a deep one and the cuts through a sort of a ridge, it is better to begin at both sides, taking

a rough level at the top, and ascertaining how deep the cutting will be at that place, and giving instructions where to begin at the sides, making sure not to cut-in too deep, or ten to one but the material will be more than sufficient to fill up the embankment. The sloping sides of the cutting will also require some judgment in forming. Hard dry substances like chalk or stone are sometimes cut as steep as to show a face at an angle of 60°, while a running sand or wet clay will not stand at more than 25°. The bank is generally expected to be clothed with something or other, Ivy not being at all unsuitable.

But however steep the cutting may be the embankment cannot be made steeper than about 1 in 85 or so, which is about a rise of 2 feet on a base of 8. Loose material will not hold together much steeper than this. Another thing to be considered here is the intended width of the road. A carriage road ought not to be less than 12 feet wide of stones, with at least 8 feet on each side of level sidings; if more, so much the better, the above being taken as the minimum. Moreover, for a road carried along the side of a hill provision must be made for carrying off the water, and a drain along the base of the cut-in side and one in the centre will be found useful. Embankments rarely require draining—i.e., if both sides are above the surrounding ground, but of course outlets for all surplus water created by thunderstorms ought to be thought of before the stones are put on.

I ought to remark that all curves should be of a bold and agreeable nature, avoiding undue twists and turns. Where the eye can command a distance the curve ought always to be in one direction, unless there be some interruption in the way as a pond, or tree, or other object, for nothing looks worse than a turning where there seemed no difficulty in making the road straight.

Details for applying material for roads to the best advantage may fittingly form the subject of a future communication.—J. ROBSON.

SOIL FOR RHODODENDRONS.

THE antiquated notion that peat soil is a *sine qua non* to insure success in Rhododendron culture is now pretty well exploded, and Rhododendrons are now planted in ordinary soil with other shrubs without any special treatment or preparation with perfect confidence of success, provided the soil contains no lime. Since this fact became established it has led to that extensive use of this finest of evergreen shrubs so much to be desired, but which formerly was regarded as a luxury only to be enjoyed by a favoured few.

During the past four or five years I have planted many thousands of Rhododendrons, including varieties ranging from the pretty little dwarf alpine species upwards to the towering hybrid majestics, without having to record a single instance of failure or sickly growth. Success so perfect and full as this is of course very gratifying, yet no special merit can be claimed on the score of high culture or careful tending. The planting was well and carefully done, and the rest was left to Nature. With few exceptions the soil and situation of the various clumps and masses are the reverse of what might fairly be termed favourable—on the sides of steep slopes and banks, in a cold low-lying bog, upon a high open plateau that is often swept by violent storms from the south-west, along the sides of wood paths among a wild tangled undergrowth, under the shade and drip of trees and by the margin of water, in deep natural beds of peat, in poor thin loam, or in soil that is literally rusty with an ochreous deposit from the percolating water of mineral springs, and in marl of such a close heavy texture that but few other shrubs will grow in it at all.

Under all these conditions do Rhododendrons flourish in perfect health. The growth is most bushy, short-jointed, and compact in the peat; it is also very bushy in the thin loam; in the marl it is absolutely rampant. Let me give an example: About four years ago a quantity of soil was excavated for the foundations of a building and thrown into a long ridge 10 feet high to conceal a drying ground; most of it was a white marl, cold, sodden, heavy, and inert, and I was somewhat at a loss what to clothe it with; among other plants I resolved to try a few dozens of Rhododendron ponticum, which, to my surprise, quickly became established, appearing absolutely to revel in a medium one would have thought likely to prove fatal to the fine thread-like roots, which evidently partake more of the toughness of wire than the softness of thread. They sustained no check and exhibited an annual increase of vigour, many of

last year's shoots being from 1 to 2 feet in length, quite an inch in circumference, and clothed with foliage of proportionate size and strength. Having lately had occasion to remove some of them I found the marl clods full of roots, yet the plants did not lift with very compact balls, but rather with several clods bound together by the roots, but retaining very much the same form which they had when thrown together four years ago, thus clearly demonstrating the tenacious nature of the marl.

Rhododendron ferrugineum forms an admirable fringe to a fountain on the sides of a cascade. I have used a third of broken brick and stone in the soil for this variety, so as to let the moisture caused by the constant dash of spray among the foliage to pass from the roots quickly and find it to answer admirably, the growth being dense with healthy foliage, and the plants quickly merging into a compact belt.

Under the shade of trees the growth of Rhododendrons is apt to become thin and long, but it is never slender, the shoots being as robust as those of a common Laurel. Thus, then, in the Rhododendron we have a shrub which neither drip, shade, exposure, or poverty of soil can affect; a perfect weed in hardiness, adaptability, and tenacity of life, and yet a perfect gem—a queen among shrubs—its rich foliage and richer flowers causing it to be regarded as the "glory of spring and early summer."—EDWARD LUCKHURST.

MASDEVALLIA DAVISII.

THIS plant in your report of the Floral Committee is stated to be one of the Chelsea seedlings—[a clerical error; it should have been introductions]. Some other plant must have been intended, for no seedling Masdevallias have yet flowered in England. The plant exhibited by Mr. Burnley Hume was, as you state, in splendid health, the flowers being both beautiful and distinct. M. Davisii was introduced by the Messrs. Veitch of Chelsea from the Peruvian Andes through their collector Mr. Davis. It is not such a fine species as M. Veitchii, but the clear orange-yellow flowers have a fine effect amongst other plants in the cool house.

It is also stated in your report that the plant had a first-class certificate on a previous occasion. I am not sure whether this is correct; if not, it certainly ought to be certificated. As exhibited it was well worthy of that honour. The plant has not been long enough established in this country to have attained perfection, and January is not the best month for this class of flowers opening. I think it a first-class plant, and far superior to many Masdevallias that have been foisted on the growers of this country through foreign agency and at a far higher price.—J. DOUGLAS.

[It was certificated on August 18th, 1875.]

APHELANDRA AURANTIACA ROEHLII.

"R. H. S." is rightly "informed by a gardener that the most easy and certain way of raising a stock of this stove plant is by sowing the seed in heat in spring, &c.," as was pointed out in our Journal, vol. xxiii., new series, page 72.

In our stove this plant has been for some years almost a weed. We have several dozen plants in 4-inch pots seedlings of about 6 inches in height without the flowers, and from autumn to spring they enliven the house with their noble spikes (as many as the plants have crowns) of the brightest orange scarlet. I have seedlings which have flowered twice or thrice, some four times, and they are not more than 6 to 8 inches in height. These plants flower at almost all seasons of the year, the plants being in various stages; and the flower spikes as they go out of bloom being removed, from the axils of the leaves next below will appear two shoots, and these, if the roots are cramped, will not elongate more than an inch or two, having prominent apices from which will appear in due course spikes of bloom.

I am glad "R. H. S." has drawn attention to the easy culture and highly ornamental character of this very useful plant, which succeeds in a cool stove or warm greenhouse.—G. A.

THE ARRANGEMENTS OF COLOURS

IN THE BEDS OF THE LONDON PARKS AND GARDENS.—No. 4.
DESIGNS FOR FLOWER AND CARPET BEDDING ON GRASS.

As green is the predominating colour in Nature, enlivening, subduing, and refreshing, we must have it for a groundwork

in all our arrangements. Ofttimes more of the beauty of a garden depends upon the healthy hues of the shrubs and the verdure of the lawn than on the flowers. If bright colours preponderate they oppress, but if associated with an ample green setting they cheer and satisfy the eye and mind. The art of the florist and gardener, as far as colours are concerned, consists in arranging plants so as to produce harmony of form and colour in both foliage and flowers, as in flower-garden groups, beds, belts, ribbons, and conservatory arrangements. It is to aid those who are not skilled in the arrangements of colours that a few examples are submitted at a period when preparations are being made for the ensuing summer's display. Ladies of late years have aided in the arrangements of colours in their flower gardens, and we must admit they have displayed considerable taste; but in order that their plans may be effectively carried out it is imperative that they be submitted to the gardener some months prior to the bedding-out season. Delay in this matter is a common source of failure, for however skilful a man may be, he cannot prepare the plants when time is not afforded them to grow. On pages 488 and 489, vol. xviii., suitable modes of planting beds of a circular form, numbered A and B, were submitted, and I now continue the series.

BED C.

1. *Leucophyton Browni*.—This is undoubtedly one of the very finest plants for carpet bedding or any select design. In flower beds it cannot fail to become a universal favourite. Its compact upright habit, and its numerous branches of small white shoots standing up as stiff as wire, which makes it so useful for panelwork and forming divisional lines. This plant has been kindly treated, and yet treated wrongly. It has been put in a warm house, which has made it look sickly; it dislikes even the small of the fire. The proper place for it in winter is a cold frame; it will live and be healthy the whole time. It will strike very readily in a cold frame, and that is the only way to ensure its success.

2. *Coleus Verschaffeltii splendens*.—This is a very beautiful

variety; it is a sport from *C. Verschaffeltii*. The colour of the leaf is much brighter, the habit dwarfer, which makes it an improvement for decorative purposes. It is a gem among the *Coleuses* distinct and beautiful.

3. *Alternanthera magnifica*.

4. *Lobelia Porcelain Brilliant*.—This beautiful variety is a valuable addition; it produces a profusion of fine expanded light porcelain blue flowers, prettily relieved by a small white eye. It is a tone of colour very effective in contrasts for the decoration of the flower garden.

5. *Golden Pyrethrum*.

6. *Alternanthera versicolor*, mottled rose and carmine. This is a very distinct and pretty variety, splendid in colour, dwarf and compact in habit, and admirably adapted for the decoration of beds in an exposed situation. It must not be planted in too rich soil, or it is apt to grow too strong and become green.

7. *Sedum acre elegans*.

BED D.

1. *Perilla nankinensis*.—The entire plant is of a deep bronze purple colour, almost black, crisp and curly. It contrasts best with yellow. It is an annual. Sow the seed in March.

2. *Golden Pyrethrum*.

3. *White Lobelia nivea*.—I consider this the best of all the white *Lobelias* both in purity and size of flower.

4. *Coleus Verschaffeltii splendens*.

5. *Verbena Sportsman*.—A rosy pink colour. It originated in Hyde Park, being a sport from *Purple King*, and is in every respect the same as *Purple King* except the colour. It is a pleasing acquisition. No less than ten thousand plants were used in the above park during one season, and which won general admiration.

6. *Lobelia Mazarine Gem*.—New, an admirable variety. It is quite unequalled in depth and brilliancy of colour, and produces its blooms up to the very end of the season.

7. *Alternanthera amce-na*. Brilliant magenta red.

8. *Echeveria secunda glauca*.—N. COLE, Kensington.

MESSRS. STUART & MEIN'S PROLIFEROUS SCOTCH KALE.—At first sight or seen from a distance this looks like a good stock

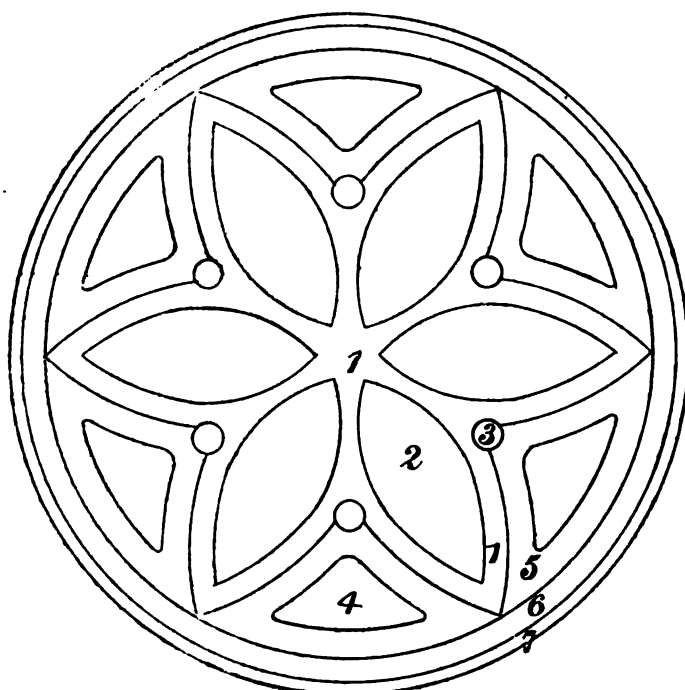


Fig. 22.—Bed C

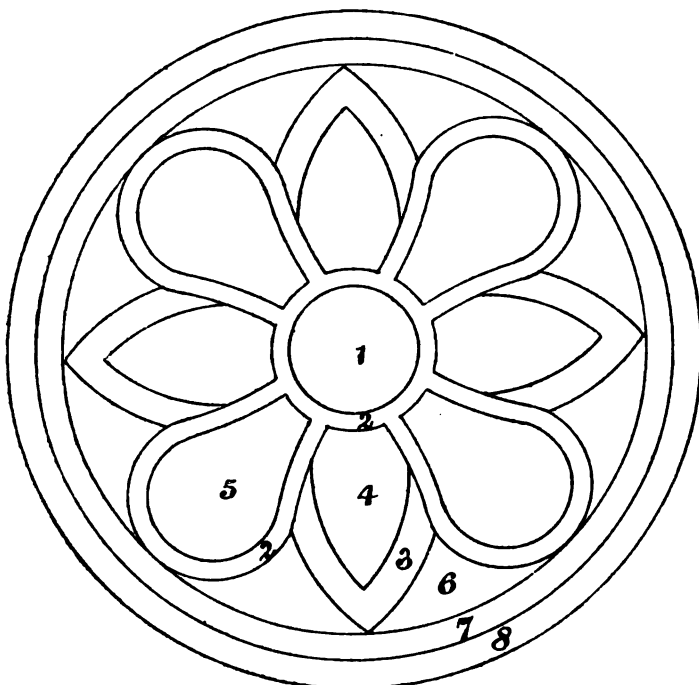


Fig. 23.—Bed D

of Kale, or "Curly Greens," as the vegetable is designated by the country folks in Scotland. On a nearer inspection the whole upper surfaces of the leaves are thickly studded with beautifully curled secondary growths or leaflets; they grow so thickly on the ribs of the leaves as to conceal them quite when the plant is growing. I had one of the "Greens" cooked, and it proved to be of most excellent quality. As far as I am aware this is a distinct vegetable, and as it was shown at South Kensington well worthy of culture.—J. DOUGLAS.

WAR WITH INSECTS.

It is very fortunate for gardeners that the treatment best calculated to grow plants vigorously and healthy is also that most distasteful to insect life. Let a cold draught or a dry heat cripple the tender newly grown foliage, and red spider, thrips, and aphids are delighted; they increase and multiply by myriads. On the other hand a sturdy dark green foliage will generally be shunned by them; there is, then, a double reason for keeping plants in a fresh thriving condition. The amount of injury done by insects is not sufficiently taken into account, and it is, perhaps, more because they are loathsome to the sight than for anything else that they are looked after as well as they are. But I am persuaded that there is hardly a plant grown which, if it receives a severe check from insects or otherwise, can quite recover from it. It will, like a patched-up member of the animal kingdom, have a weak point somewhere in its constitution, where it will be more susceptible to injury than others which have not received such a check.

There is very little apparent difference between the treatment given by a successful and an unsuccessful grower. The principal difference consists in the former paying attention to very small details which the latter thinks useless and contemptible. What if a plant should droop a little, or have an insect or two hid away in its foliage? It is of no great consequence to the one, while the other would almost as soon see his plants dead as that such a thing should happen. Success is always gained by strict attention to very small matters. I will endeavour to point out a few of them which I think merit more attention than they usually receive, and which if attended to would materially lessen the labour employed in cleaning plants.

I will pass over the question of high night temperature kept by artificial means, as I have reason to believe that is nearly a thing of the past. But what about giving air in the morning? Is it never given too late or too abundantly? Imagine a house with a temperature of 70° while the air outside is frosty. Fill the house with tobacco smoke and watch how very rapidly it all escapes through the smallest apertures. The air, I imagine, of the house changes in nearly as short a time as it takes the smoke to escape, and of course would change just as rapidly if there were no smoke there, the smoke only making the movement of the air visible. The greater the difference between internal and external temperatures the more rapidly will the air change in the house, and therefore the openings for ventilation ought to be regulated according to such difference. People are too much afraid of letting the sun help them to do their forcing; they neutralise its good effects by letting in a rush of cold air. We are getting better in this respect, but there is still room for much improvement. There must be more nature-forcing; the more light the more heat and moisture should there be. Many people would be surprised at the amount of heat some plants will flourish in when they have sufficient sunlight and moisture, if they have not previously been drawn out too much with fire heat during dull weather.

I have at times been much abused for recommending low figures for night temperatures, such as 55° for Cucumbers, Muscat Grapes, &c., and perhaps some people have even been inclined to doubt my statements because they themselves have not succeeded under such conditions. The fact is my mean temperatures in bright weather are as high as those of any other cultivator because I allow a very high maximum. Very often, instead of giving air on every favourable occasion as the old calendars recommend, it is better policy to shut-up as close as possible when the sun shines in winter and early spring. This kind of forcing, however, requires more care and judgment than the old-fashioned way, but, at the same time, when properly done it is much more successful and far more economical.

All the air a house is likely to require during any part of the day ought to be given before the sun has shone on that house half an hour, and before the thermometer has risen 5°,

a little the instant the sun touches it, a little more in a few minutes when it is seen the mercury is inclined to rise, and so on by degrees, till as much is given as former experience has taught to be necessary. I would much rather a man under my command remained in bed all day than that he should commence giving air after the sun has been shining on a house half an hour. It may be thought I am running from my text, but it is not so, as I will endeavour to show.

The French Bean is generally supposed to be a likely home for the red spider, and probably many people never saw it forced through the winter without that pest. Now I have French Beans at the present moment in five houses in all stages, from those just peeping through the soil to others which have been in bearing some time, and there is not, and never has been, a red spider on them. This is almost entirely due to moderate night temperatures and giving air in a proper manner. Of course a very strict look-out for the enemy is kept, and it would be vigorously attacked on its first appearance. Prevention is much more economical than curing, as well as being better.

Another common way of checking plants and making them more liable to insect attacks is by using water which is too cold. In every well-arranged hothouse there is a tank in which the water is supposed to be of the same temperature as the house; but this is sometimes misleading to young men. Probably early in the morning it is sufficiently warm, but after the sun has been shining on the house, and perhaps on the pots in which the plants are grown, it is not so. It is always better, when it can be done, to water early in forcing houses, but when we are obliged to do it after the sun has been shining some time the water should always be tested with the hand if not with the thermometer, and it is better to have it a little too warm than too cold; while that for syringing should always be 5° warmer than the house.

One other way of propagating insects and I have done for the present. It is by neglect of forced plants—principally those forced for the sake of their flowers—after they have done their duty for the season. What becomes of them then? How are they treated? Are we sufficiently grateful to them for the pleasure and high encomiums they have brought us? Or do we forget them till we want them again? I am afraid many must plead guilty.—WM. TAYLOR.

DWARF PEAS.

According to circumstances, I am urged to allow all the air and light possible to circulate and shine upon my Potatoes: hence I eschew tall Peas and will venture to prescribe for folks having small gardens, to whom a maximum of Peas and a minimum of Pea-sticks and labour are compatible.

This (Woodstock) is a late cold soil. To secure a certainty of crop I do not sow Peas early, rarely till such time as the ground is become warmed by the spring sunshine, when the Peas will grow quickly out of the way of ravages from creeping things and others that hop. Referring to my note book of 1875 I find that I, on April 17th, sowed Maclean's Multum in Parvo, Laxton's Unique, Dr. Hogg, Supplanter, Connoisseur, Omega, and somebody or other's Robert Fenn, and Richard Dean Peas. June 26th, gathered from Unique and Dr. Hogg. The latter grows 3 feet. Unique grows 1 foot only in height, and is properly an early-border Pea, a site whereon it would have proven quite a week earlier. July 8rd, gathered from Multum in Parvo; grows 3 feet. July 17th, gathered from Laxton's Supplanter and Richard Dean; each grows 3 feet high. July 24th, gathered from Robert Fenn; grows 3 feet high. July 31st, gathered from Laxton's Connoisseur and Omega. The latter grows 3 feet 6 inches high, and Connoisseur grew with me verging to 9 feet in height; we renewed taller sticks to it six times over, and it still cried for "more." I read its height on the packet as "3 feet;" it must have meant 8. It is a capital Pea for a garden of over 8 acres in extent; but for me, in my circumscribed sphere, "never more." I intend to substitute for it Turner's Dr. Maclean. The above, sown on the same day, served us with Peas daily and consecutively from June 8rd to September 15th.

On May 2nd were sown Maclean's Multum in Parvo, Laxton's Omega, and Robert Fenn Peas. The first came into bearing by the middle of September, followed on the 1st of October by Robert Fenn, and from the 15th of October to the latter end of November, by Laxton's Omega, good and fine flavoured to the last. This and Connoisseur may be truly termed to-gather-and-come-again Peas, for on the 31st of July I picked

from my April sowings of them for the table, and in the middle of September I gathered my ripe seed, and Peas fit to cook from both the sorts. They will produce for a longer period than any other kinds that I am aware of.

This is a small history; but, according to my experience, it is of a capital assortment of Peas. Not always large and sweet, but Peas of various sizes, colour, and flavour, and each of them tender and very good. All the varieties mentioned above, with the exception perhaps of Dr. Hogg, are what are termed "branching Peas," and require to be sown thinly. My plan is to cast out a drill, with a narrow spade 4 inches broad and 2½ inches deep. Then place the Peas singly, in two lines, about 8 inches apart, in a triangular manner. The result I find quite worth the trouble.—ROBERT FENN.

FORCING ROSES.

For this purpose Roses on their own roots or on the Manetti are preferable to those budded on the Briar or Dog Rose; but good Roses can be produced from plants budded on the Briar. The best way is to take them out of the ground about the beginning of October, and pot them in medium-sized pots in rather rich but not heavy soil; by the middle of December they will be nicely rooted. They can then be pruned and taken to the house to be forced as wanted; but this should not be done very early the first year.

Roses which are required to bloom by the beginning of February should be pruned by the middle of November, and a week or two afterwards started in a temperature about 45°, increasing it to 60° by the time they flower. In fact a vinery started at Christmas is exactly the place to suit them. When the flowers have expanded they can be removed to the conservatory, which would be perhaps 10° lower. This will prolong the freshness of the blooms.

When the plants have done flowering they should be removed back again to the warmer house, where they must have as much light and air as they possibly can, and in a few weeks they will bloom again; and with care in keeping them free from mildew and green fly they will bloom the third time. The last time a very little before they come in out of doors. If a batch of Tea and Hybrid Perpetual Roses are placed in the same house to be forced, the former will flower some time before the latter.

After they have done flowering plunge them in ashes out of doors, and if any flower buds appear pinch them off, and in August take them out of the ashes, and lay them on their sides, keeping them rather dry, which will enable the wood to get well ripened by the time they are pruned. Care should be taken not to over-pot them, as that is one of the chief causes of mildew; but if it should appear syringe with soot and water, syringing again a few hours after with clear water, or dust with sulphur.—H. ETHERINGTON.

PEACH-BLOW POTATO.

New Potatoes—or, indeed, any new introductions in the vegetable world—must be able to run the gauntlet of adverse criticism, or they cannot establish their claims to support. Healthy honest criticism is most valuable and beneficial, and is, no doubt, equally appreciated by the vendors of new vegetables as by the public, for the "honour" of introducing anything new is not only empty, but in the end most damaging to its patron if the article proves new and "bad" instead of "new and good."

But criticism, to afford sound guidance, must be discriminating, and we must not, for instance, adjudge all American Potatoes bad because some of them may fail to be valuable, any more than we must regard all our American coins dishonest because one or two of them have been "tarnished sharp" with "other people's money."

Your reviewer of a pamphlet advocating the value of raising Potatoes from eyes has, I think, made rather "small Potatoes" of that innovation, yet I think that at least there may be some of the American Potatoes worthy of individual examination, to see if we cannot find a little corn amongst the chaff. In the aggregate the "foreign novelties" have no doubt been "over-estimated," but I think that verdict can hardly apply to the variety named. Peach-blow has not been unreasonably puffed, and, so far as my experience goes, it is not only the best of all the American sorts, but is as good, and in some respects better than many of our standard English varieties. I have grown Peach-blow and found it good, and I have seen

it grown extensively by better growers than myself, and they and their customers have found it good also.

Your reviewer has mentioned Lincolnshire. Well, it is in that county where my experience of this sort has been gained. Mr. Lumden of Bloxholm has, I believe, grown it largely, and if a Potato satisfies that cultivator I always have a suspicion that there is "something good in it." Unless I am in error Peach-blow has satisfied Mr. Lumden. A neighbour of Mr. Lumden's, a good and extensive grower of Potatoes—Mr. Frisby of Blankney—has I know also grown Peach-blow freely, for I have seen some wonderful crops of it in the Blankney gardens, and have heard Mr. Frisby extol its good qualities, and he, too, is a gardener not likely to be deceived. Farther, I have known a farmer in Lincolnshire grow it by the acre, and although he charged the "tip-top" market price for the produce, such was the fame of Peach-blow amongst the consumers of the neighbourhood that the demand could not be met. I think it is fair to this variety, and to its introducers, that this statement of facts should be recorded.

Peach-blow is a round white variety with pink eyes, hence its name. It is a heavy cropper, ripening early, and is of good quality. It would be well to know if its good qualities and general usefulness under ordinary field and garden cultivation are sustained. My remarks refer to a period of three years ago.—J., Lincoln.

AURICULAS.

Your correspondent "ALFRED" asks me if I know where he can obtain a plant of Taylor's Glory and of Page's Champion. I regret that my reply is brief and disappointing. I do not know any grower at the present time, private or otherwise, who has plants of these two varieties to part with. I could tell "ALFRED" where the plants lie among the collections of members of the National Auricula Society; just as it is said that in the diamond trade the whereabouts of the finer gem is known to the jewellers; but if I were wanting Auriculas of such scarcity as the two in question I should consider the only equivalent would be the offer of some exchange with other sterling varieties of Auricula. Their money value even if their highest catalogue price were doubled is in the present scarcity of the flower no compensation. A guinea can be won over again, but an Auricula like Glory or Champion cannot be replaced.

I do not know the weight of character in "ALFRED's" collection, but if he be strong in one or two first-rate white or green edges, and would come to the National Auricula Society's Exhibition in Manchester next April, he would be welcome in the brotherhood that is so distinctly "florist," and might make his wants known to us.

In Auriculas I think more may be done in filling up a good collection by exchanges than by mere money. I should be sorry to melt down all my Champions and Glories at many times their money quotations, for they would simply be lost, and that which won them from me could not win them back. These two beautiful varieties both in habit of plant and quality of flower have not been seen much at the National Exhibition. They are both early risers in the spring, generally starting before January is out; they are both rapid in coming into flower, and have been always a week or so too forward with my own plants of them for a show in the fourth week of April.

They are models of the two styles of Auricula foliage, mealed and green; and the white edge of Glory and the green edge of Champion are splendid specimens of that most peculiar point of beauty in the florist Auricula "the edge."—F. D. HOBBS, Kirkby Malsard, Ripon.

OUR BORDER FLOWERS—LOOSESTRIFFES.

Among the flowers of autumn none stand out more prominently than the family of Loosestrifes. Our subject, *Lythrum Salicaria*, is a most accommodating plant. Wild it may be, and quite at home by the rippling stream or the stagnant pool, and many secluded nooks away from the haunts of man. In shrubby borders or the wilderness, by the margins of pools or lakes, we can say of it "Always at home." Its cheering rosy-pink-coloured flowers are very attractive and effective at a distance. Being of pleasing habit the plant is suitable for the back row of a border.

There are other kinds that should not be passed by. *Lythrum roseum superbum* is a stronger grower than the first-named kind, and has larger flowers a shade or two darker in colour,

which makes it all the more desirable. *L. lanceolatum* is worthy of notice, and is a good plant for the shrubbery. *Lythrum lineare*, a white variety of much dwarfer habit and of more delicate constitution than the preceding, is seldom met with, but it ought to be sought after. It is a real acquisition to a choice collection of border flowers.

They are easily increased by division after growth has commenced in the spring, and are not at all particular as to soil. They thrive in most ordinary soils, and when established last for a long time. All the care they require when established is to leave them alone. Our native species are found on the strongest clay as well as the more genial loam.—*VERITAS*.

NOTES AND GLEANINGS.

MR. HUNTER of Lambton Castle is likely to add to his fame as a grower of Grapes the more rare honour of being a raiser of varieties of PINE APPLES. Mr. Hunter states (in "The Gardener") that his first batch of seedlings numbered thirty varieties, which were raised from seed accidentally discovered in a fruit. Since then Mr. Hunter has systematically and successfully fertilised the flowers of the Pine Apple and has obtained seeds. He is still continuing his experiments in this unusual field of cross-fertilisation and deserves the reward of success, especially as to manipulative skill must be added patience, seeing that "it takes twelve years at least to raise a stock off a single seedling Pine Apple."

—THE declared value of POTATOES imported into the United Kingdom last year was £1,071,518, against £1,085,589 in the previous year.

—THE range of SIZE OF TREES extends from the minute form of the Alpine Willow which we have picked on the summit of Skiddaw, of less than 3 inches in height, to the lofty column of the majestic Wellingtonia, which towers in the Giant Yosemite Valley to an altitude of 850 feet. A height of 200 feet is attained by the Umbrella Pines of Italy. In Solavonia the Sapin (*Abies pectinata*) attains an ordinary height of 275 feet. The *Eucalyptus Amygdalina* is described by Dr. Mueller as attaining on the banks of the Yarra River in Victoria the height of 420 feet in many instances. The Californian Big Tree is said to measure 96 feet in girth. In length of life and rapidity of growth the diversity is no less marked. A *Pinus sylvestris* from Finland 70 feet in height, and 72 inches in girth, has been found to register the passage of 518 seasons by its concentric rings. The venerable Yews that form a majestic avenue at Studley Royal, or the yet more magnificent patriarchs of the same species that form a kind of Druidic circle in the sequestered and beautiful glade near Guildford, known by the name of "Fairy Land," must have been in existence when the wood of the Yew decided the fate of battle in Norman or even in Saxon times. The *Eucalyptus globulus* on the contrary, rapidly attains gigantic dimensions. It has the property of absorbing ten times its weight of water from the soil, and of emitting antiseptic camphorous effluvia. When sown in marshy ground it will dry it up in a very short time, according to the evidence collected by M. Gilbert mentioned in the *Medical Times and Gazette*. In the spring of 1867 about 13,000 of the *Eucalyptus* were planted at Paddock, twenty miles from Algiers, in a plain situated on the banks of the Hamyze, and noted for its extremely pestilential air. In July of the same year, being the time when the fever season sets in, not a single case occurred; the trees were by that time 9 feet high. Notwithstanding this rapidity of growth the wood is of great strength and tenacity; and is to be obtained in any lengths.

—WE have the pleasure to announce that the Commissioners of the Cologne Exhibition have awarded to T. H. P. DENNIS & Co., Mansion House Buildings, London, and at Chelmsford, who were the only British exhibitors of horticultural buildings, a DIPLOMA, GOLD MEDAL, and 2000 marks for Victoria Regia house; also a DIPLOMA and 750 marks for heating apparatus for the same.

—M. CHATIN has lately called attention in the French Academy to some curious periodic movements in the LEAVES of the Conifer named *Abies Nordmanniana*, which are whitish on the lower, dark green on the upper surface, and are much admired. If the tree be observed early in the morning, or about sunset, the *ensemble* of the foliage seems uniformly whitish; whereas, in the course of the day, the green that seems very general. This is found to result from an alteration in the position of the leaves, so that they present now

their upper, now their under surface to the observer, and a diurnal position can thus be distinguished from a nocturnal one. M. Chatin has been studying these movements, and promises some further details regarding them shortly.

FRUIT FALLING INTO A NEIGHBOUR'S GARDEN.

RECENTLY in the Clerkenwell County Court, in the case of Patrick v. Allen, the plaintiff proved that five Pears worth 6d. each fell from one of his trees into the garden of his neighbour Allen. Allen threw them back into Patrick's garden, who sued for the bruising of the Pears occasioned by the throwing. The Judge said that Allen was not justified in so throwing them, and assessed the damage at 6d., and the costs were 18s.

On this case the following remarks have been furnished by a friend:—

Overhanging boughs and fallen fruit cause frequent disputes among neighbours, particularly in small suburban gardens. Let us consider what the rights of the parties are.

If A's tree overhangs B's premises, the entire tree and its produce belong to A. If therefore by natural causes the fruit, or a bough, or the tree itself fall on B's land, A has the right of re-capture, and he may get over the fence to recover his property.

But let A beware. When the law gives a man a summary remedy it watches him with such jealousy that if he does the slightest damage, or at all oversteps the absolute necessities of the case, the law withdraws from him the protection she accorded, and treats him as a trespasser from the beginning. It is better therefore to decline where you can the proffered favours of the law, for they are only snares. Distraint for rent, which is a favour of this nature, had become a most perilous proceeding until a statute of George II. restrained the Judges and brought them back to common sense.

Let A then ask B either to return his property or to show him where he can most conveniently enter the premises for the purpose of re-taking it.

The words I have used above, "by natural causes," must not be passed over as unmeaning. There is a difference between the case of a fruit falling from ripeness or a bough becoming detached by wind, and of a fruit falling by A's shaking the tree or a bough sawn off by him. The former is the act of Providence, the latter of A for which he must be answerable. Browne, in his "Legal Maxims," cites a case, but unfortunately without naming it, where a defendant, in clipping his hedge, had let fall some of the clippings on plaintiff's land. For clearing them off he was adjudged to have committed a trespass.

But has B no remedy? Yes, he can cut off the overhanging boughs, but for the reason given above let him not do so—at least until he has asked A to remove them himself. On his refusal let B cut them, taking care not to go a hair's breadth beyond the boundary line.

Or, as the land beneath the overhanging bough is rendered unfertile, let B commence an action on this ground for trifling damages. If after verdict A still defies him, he will, on a second action, get substantial damages.

No right of prescription can be set up by A, for boughs as well as roots are not fixed, but rove, and change their position and size from year to year. For this reason Gale ("On Easements") says, that there is no prescription as to roots, and the same argument applies to boughs also.

I have assumed throughout that A and B represent two separate owners. If they are merely tenants holding under one owner, the tree belongs to him and he should settle matters.

Having thus gone through the chief points as regards the legal rights of A and B, let me conclude by showing them a much more excellent way—namely, let A be allowed annually to gather his fruit, and let him leave a hamper of it at B's door as a token of thankfulness and good will.—G. S.

TUBEROUS-ROOTED BEGONIAS.—No. 2.

THE claims of these beautiful summer-flowering plants having been noticed, a few notes on their culture may appropriately follow.

FOR CULTURE.—The tubers should be potted in February in small pots, in soil consisting of two-thirds of good friable loam, the remaining third being equal moieties of leaf or light peat mould and silver sand. The drainage should be ample

and efficient. Water should be very sparingly applied until the plants have made some growth, but when they are growing vigorously a more copious supply is necessary. As they increase in size they should be shifted into larger pots, and the shifting repeated till the flower buds make their appearance. The temperature in which the plants are started should be from 50° to 55°, as the season advances this may be slightly raised. Under the conditions above stated fine specimen

plants in 8 and even 12-inch pots may be obtained from good tubers.

As soon as the flowering is over—which in healthy well-grown specimens lasts from two to three months—the tubers must not be allowed to dry too rapidly, or they will shrivel and weaken. They should be allowed to dry-off very gradually and afterwards be preserved in a cool but dry place; of course, free from frost.



Fig. 24.—*BEGONIA STELLA*.

GARDEN CULTURE—These Begonias have been proved to be grand additions to the summer flower border. To insure their flowering freely and producing flowers of good proportions, the border should have a south aspect, and particular attention should be given to the drainage, for these Begonias are sub-alpine plants, the parents of the best of the hybrid varieties, as *Begonia Veitchii* and *B. boliviensis*, having their native home on the Andes of South America at considerable elevations. They will be found to succeed best if the tubers are potted as described above, early in spring, in a temperature of about 50°, or for want of this in a cold frame, and, when the weather is sufficiently mild and the plants hardened-off, to plant them out where they are intended to flower. In sheltered situations, and in the south and west of England, a covering with fibre 2 or 3 inches thick will be a sufficient protection through ordinary winters; but generally it will be safest to treat the

tubers after flowering in the same manner as those grown in pots, by taking them up and drying them off gradually.

The following, introduced and raised by Messrs. Veitch and Sons, are undoubted acquisitions:—

Begonia Veitchii.—Flowers from 2½ to 3 inches in diameter, vivid vermilion. Figured in the "Botanical Magazine" for 1867, where Dr. Hooker says of it—"Of all the species of Begonias known, this is, I think, the finest. With the habit of *Saxifraga ciliata*, it has immense flowers of a vivid vermilion cinnabar red that no colourist can reproduce. It adds the novel feature of being hardy in certain parts of England at any rate, if not all."

B. intermedia.—A cross between *B. Veitchii* and *B. boliviensis*. A plant of vigorous habit and fine foliage. Flowers cinnabar red, deeper than *B. Veitchii*.

B. Vesuvius (figured last week).—A very profuse bloomer and

admirably suited for outdoor culture. Flowers bright orange scarlet.

B. Chelsoni.—A cross between *B. boliviensis* and *B. Sedeni*. Flowers a bright glossy red.

B. Sedeni.—A cross between *B. boliviensis* and *B. species*, a plant of free growth and robust habit. Flowers rich magenta.

B. Model.—A variety, the result of intercrossing *B. Pearcei*, *B. Veitchii*, and *B. Sedeni*. Flowers bright salmon suffused with orange.

B. Excelsior.—This variety has *B. Chelsoni* and *B. cinnabarina* for its parents. Its colour is very brilliant, a light orange.

B. Emperor.—This fine Begonia was exhibited last year at the Royal Botanic Gardens, Regent's Park, and at the Royal Horticultural Gardens, South Kensington. It received first-class certificates from both Societies. It is also figured in the "Florist and Pomologist" for December, 1875. It is of robust habit and foliage, and its flowers the most brilliant scarlet of the tribe. It is, I believe, not yet in commerce.

B. Acme.—Has also been before the public on several occasions, and attracted much notice on account of its brilliant colour, which is a delicate orange pink, and quite distinct from the other varieties, to which, however, it is a very welcome addition.

B. Kallista.—Is another fine robust hybrid with medium-sized flowers of a rich vermilion scarlet, the deepest in colour yet obtained. It is very floriferous, and an improvement on *B. Stella*, which is figured as representing a fine type of these valuable plants.

Where these plants do not flourish satisfactorily under pot culture it is almost invariably the result of growing them in too much heat. A sun-heated pit or frame is preferable in the summer months to a fire-heated stove, hence these plants may be successfully cultivated by all who have the conveniences of a Cucumber frame and other ordinary structures, adaptable to growing Geraniums and other popular greenhouse plants.—W.

ABOUT MANY THINGS.

"Variety's the source of joy below."

AND first as to the great use of your paper—the help, the comfort, the friend it is to us all who take an interest in gardening. I had been for weeks in doubt as to what vegetable seeds and Potatoes I should order for my kitchen garden. I have been overwhelmed with seed catalogues, *vade mecum*, amateurs' guides, each one apparently more beautiful in their "get-up" than last year, full of every kind of information, but alas! perfectly bewildering in the number and variety of the sorts of Peas, Potatoes, Beans, &c. "What shall I do? What shall I order?" has over and over again been my cry, and I have kept putting off sending my small order till my friends will consider if I have out them. In the very nick of time, as a very *Deus ex machina*, your paper arrives, and I am relieved from my perplexity, for the very first article is headed "Notes about Potatoes," and there I find a selection of about six sorts, which will answer my purpose admirably, and the very next page contains an article from my evergreen friend, the genial "D. Deal," upon the vegetables which have succeeded with him during the last year, including a select list of Peas, which vegetable is my particular fancy, but which also is year by year the cause of greater perplexity from the extraordinary and ever-increasing number of sorts.

Then to turn to another part of "our Journal," I find the list of the fixtures of the horticultural exhibitions of the greatest boon, and one for which exhibitors cannot be too grateful. Among these entries one which brings to my mind an amusing scene last year. It is that of my native place, "Brighouse, July 29th, Messrs. C. Jessop and E. Bawnley, Hon. Secs."

Mr. Baring Gould opens his capital work on "Yorkshire Oddities" by saying, "every Yorkshireman is an oddity," and there is more fun to be had in that county than any other I have been in. I happened to arrive the day before the last Show, and was greeted by, "Why you have come just in time for our show." Early next morning I accompanied one of the Committee to the show ground, and never before did I see such a wonderful place for a horticultural exhibition. At one side was erected an enormous grand stand with beams and joists fit for the sons of Anak to sit on, and all over this stand was to be found a printed paper certifying that "We (two practical carpenters) have examined this stand, and certify that it is of

sufficient strength and stability." In front of the stand immense barricades separated a large portion of the field. This is for the jumping. Jumping? Yes, leaping. We have prizes for hunters, &c., as well as for flowers. At the other side of the field was an enormous tent, as large as those we usually see down here, which contain the flowers. "Is that the tent for specimens?" "Oh, dear no, they are all in one tent—that is for the refreshments." And, gentlemen, it would have astonished you if you had seen the preparations for so supplying the needs of our jolly tykes. The very tables were supported on beer barrels, a most ingenious arrangement as they performed the double purpose of supplying two kinds of support. There was as much beer that day consumed as would have kept my parish well supplied for years.

Then at last we came to the flower and vegetable tent, and what a wonder it was. Of enormous size, filled with a struggling, gesticulating, shouting mob, no policeman to keep anything like order. No one to prevent all the boys and girls of the town coming in. There they were all together, exhibitors without coats, committee-men screaming, "Here, lads, any more Beet-roots?" "Now, then, three sticks of Celery here!" And then a sudden charge was made on the populace by some indefatigable member of the Committee, who proceeded to what we call "poise" a few small boys, who immediately returned to the same place directly his back was turned. "Why in the world don't you have a policeman to keep order?" I asked. "Oh! they said they would not come unless they were paid, and we are not barn to pay them."

On one table, however, was a most miscellaneous collection of things. Joints of meat, hats, churns, whips, bridles, boxes of cigars, and even a cake covered with sugar were displayed. "What are these?" "Oh! those are some of the prizes given by the tradesmen." "And what is this?" "Oh, that's an 'air pad.'" "A what?" "An 'air pad.'" "Oh," I said, "you mean one of those things they put on chairs for invalids." "No, I doant," he roared out, "I mean chignons, pads for the 'air of the 'ead.'" The flowers were really wonderfully good, considering what a climate we have there. The Show was a most decided success, and attracted vast numbers of visitors.

And now a few words about Rose shows for the coming year, and first as to the Royal Horticultural Society. Here I know I am on delicate ground, but surely the fact of one of you being Secretary will not close the columns of our Journal to any criticism of the Society. And we rosarians have really just cause to be indignant, for the Rose show proper is conspicuous by its absence from the Society's schedule. There are a few miserably small prizes for Roses given at an exhibition late in July, but there is no Rose show in which the National Rose Show is incorporated. And why not? If any show succeed it must have been the Rose one, for the arcades were always crammed with people. And why should the Rose be left out in the cold when flowers in every way her inferiors are to have their special days? It is an insult to the queen of flowers, and I shall leave the Society in disgust, and without a regret. Why, gentlemen, if it had not been for the Westminster Aquarium filling the gap, London would this year not have a Rose show, for that miserable affair at the Royal Botanic is not worthy of the name. Do try and alter this at Kensington, use your influence in preventing this slight being paid to our queen of flowers. With the exception of the R.H.S., societies are offering more liberal prizes for Roses. The schedule of the Westminster Aquarium is a most liberal one, and at Maidstone the same large prizes of £15 for nurserymen and £10 for amateurs are offered. Frome offers grand prizes for the open classes, and numbers of other societies follow suit. Every day the enthusiasm for Roses is increasing, the sale at the well-known nurseries is so great that the proprietors have to purchase large numbers to supply their customers.

The last year brought out an amateur who will soon be *nulli secundus*. I allude to Mr. Jowett of Hereford. If he does not have very late frosts this season he will show marvellous blooms. I never in my life saw such growth as his blooms proved at the shows, except that of his great neighbour Mr. Cranston. He has the same grand soil as the latter and is as enthusiastic as any of us, and will make it hot for us in the west whenever we meet.

We are having the most violent changes in the weather down here. A week ago it was bitterly cold, though hardly any snow fell, and now it is so mild that the birds sing all day, and the Roses are beginning to show signs of returning life. I am afraid we shall have cause to rue this present state of

things; but perhaps they have the same weather in the neighbourhood of Hereford, and if so we need not complain.—
JOHN B. M. CAMM, *Monkton Wyld.*

HAWTHORNDEN APPLE.

"C. R." has at least one "brother in misfortune," for I have experienced precisely the same disappointment as that detailed on page 74. The soil in which I have made strenuous endeavours to grow the Hawthornden Apple is light in texture, with a marly and not well-drained subsoil, but yet not so much soddened as to prevent many sorts of Apples growing satisfactorily. On this point I can say with "C. R." that "with the exception of Ribston Pippin and Hawthornden no other Apple cankers here."

My employer being particularly desirous, I might almost say determined, to establish healthy trees of Hawthornden, I paid special attention to them, but without avail, and after trying for twenty years to obtain healthy trees of this coveted Apple the project was abandoned in despair.

The soil, as I have said, is light; but in an adjoining parish, where the soil is of a sounder character and deep, I have seen Hawthornden trees tolerably free from canker and bearing heavy crops of fruit. This is different to the experience of "C. R.;" but yet after special observations in different parts of the country, I have arrived at the conviction that to cultivate this Apple successfully it must have a generous and well-drained soil.

I am not certain that canker is not what I may term a local hereditary disease, for in grafting the Hawthornden on healthy stocks the scions from cankered trees have been more speedily overtaken by the disease than have others taken from trees which showed little or no canker. That is a subject worthy of some consideration, as being a probable source of failure exhibited by certain fruits which refuse, as a rule, to prosper in some localities. That fruits have their caprices is tolerably certain, and it is generally well to profit by them and to plant those sorts principally which seem to have a fancy for certain districts.

I may further note, that in endeavouring to establish satisfactory trees of the two popular sorts named in a garden to which they had clearly a great amount of antipathy I always found the advantage of Paradise over Crab stocks, perhaps because the roots of the former did not so quickly penetrate the ungenial subsoil as those of the latter. Be this as it may, the trees worked on Crabs cankered the soonest and the worst; but on neither, after many years of trial, is one really healthy tree of Hawthornden to be found in the garden where the kind has been so particularly desired.

I am glad "C. R." has mentioned this proneness to canker of a popular Apple which is credited with a sounder constitution than it probably possesses. Although others may prove the contrary, I am, by the light of my own experience, bound to regard the Hawthornden Apple, not as a constant and vigorous kind, but on the contrary one that is capricious and uncertain, and not to be relied on except in particularly good, well-drained, and deep soil. What do others say?—AN OLD GARDENER.

METEOROLOGICAL AND OTHER NOTES ON 1875 AT LINTON PARK, KENT.

LIKE a tradesman taking stock of his goods at the end of the year, we may also review the past season and judge of what it has bequeathed us for the current year.

January, 1875, was ushered-in with a hard frost and a good depth of snow, but which left us in a day or two, the rest of the month being mild. February proved dry though cold, and was on the whole a fine month. March was much the same until the last week when milder weather set in, which continued with the usual interruption of frost until the end of April. May was a dry month though not by any means a warm one, and vegetation had not the promising look at the end of it it had at the beginning. June opened more summer-like, and some useful rain in the middle of the month did much good, yet on the whole the prospects were gloomy, not so much from the lack of rain as from the absence of sunshine so essential at this season, and many kinds of vegetables fell short of what was expected, and also the hay crop.

July brought heavy rain, but not too much in our neighbourhood, as we had not any of the disastrous floods recorded elsewhere, although on the 15th and 16th of that month we

had 0.95 and 1.45 inch of rain, less than one-half of which would have given us a flood in winter, but which on this occasion only filled our rivers; and as rain was much wanted everywhere, the copious downfall of July was of much service all the rest of the summer. Some forebodings, however, of an ominous kind were not wanting of how it would affect the crops, but the last ten days being dry and fair, and August an exceptionally fine month throughout, the harvest was on the whole well secured, and fruit ripened satisfactorily, the fine weather continuing up to the 21st of September, the 18th of that month being the hottest day but one we had during the summer, and, in fact, from the 20th of July to the same time in September might be said to be the only settled summer we had; after the latter time the autumn rains gradually set in.

October was a wet month yet not remarkably so, nothing like the same month in 1872. November was wetter, and the last week of that month ushered-in winter in the shape of several inches of snow, which received fresh accessions the first week in December, with sharp frost, making an early winter; but milder weather set-in after the 10th, and we had no frost at all after the 14th, up to the 5th of January of this year, an unusual thing in the shortest days, while it was remarkably mild some days, the thermometer recording 51° on Christmas day, and 54° on the 22nd. This mild weather was, nevertheless, not without its inconvenience, the lack of sunshine the whole of the autumn and up to the end of December has told sadly against forcing, and it has been no easy matter to prevent Geraniums and similar plants damping-off in greater quantities than usual, which the reviving influence of sunshine does more to prevent than any amount of fire heat. One redeeming quality, perhaps, the expiring year has bequeathed to us, and that is, the ample rainfall is likely to tell on our springs and other sources of water supply for the current season, and we may look hopefully to the future, for as will be seen by the following table, the total rainfall has been an ample one on the whole.

	Rain in ins.	No. of Rainy Days.	No. of Frosty Days.
1875. . . .	50.35	157	72
1874. . . .	23.48	143	58
1873. . . .	23.99	139	73
1872. . . .	52.10	215	52
Average for 20 years .	25.59	165	58

—J. ROBSON.

HORSE RADISH.

THIS is an important, yet frequently is a very abused or neglected crop. Horseradish is always in demand in winter and summer, but the beds, as a rule, receive but scant attention. Common is it for a man to grope half an hour, perhaps, in frost and snow picking and digging for a "stick" that he is ashamed to show the kitchen maid, spoiling, probably, twenty crowns in his endeavour to find one or two useful bits of roots. By the loose mode of culture often adopted much ground is wasted; in fact, the beds frequently have no culture at all. The crowns exist because they refuse to die, and spread over a five times greater extent of ground than would suffice with good cultivation.

I used to trench the ground 2 feet deep and place the crowns nearly at the bottom of the trenches, and so obtained good roots, but not, I thought, worth the labour they had cost. I then made holes with a crowbar to the same depth, dropped in sets or crowns, and filled-up the holes with leaf mould, and so saved much labour, and had equally good "sticks." But both those plans entailed much labour in taking up the crop. The Journal then came to the rescue, and a mode of culture was given by Mr. Wills which I at once adopted and have never departed from. That is some years ago, and time has proved the value of the plan.

I now form a ridge of soil—garden refuse, old tan, manure, indeed any vegetable refuse that is handy. The ridge may have a 3-foot base and be 2 feet high. In the sides of this the roots are planted slantingly. Roots are selected about a foot long or more, and of the thickness of a tobacco pipe. These are slightly scraped (as if for the table, but more lightly) to remove the eyes, and are inserted perfectly straight, their crowns just being level with the soil. These smooth straight roots thicken and form splendid roots that can be dug with comfort and be carried through the garden in broad daylight without any sense of shame.

I have found no plan comparable to the ridge mode in raising Horseradish, none so economical, effectual, creditable, and comfortable. I generally make a fresh ridge every two or three

years, but to grow "sticks" to the greatest perfection the ridges should be renewed annually, and should consist largely of manure. I am sure this rational mode of growing creditable Horseradish is worthy of more general adoption. It is surprising what a large supply of roots may be raised from even a small extent of ridge. No time is better than the present for planting the roots.—W. B. J.

OLD APPLE TREES.

I HAVE read with much interest "RADICAL CONSERVATIVE's" articles entitled "Old Trees," but in regard to them he seems more "conservative" than "radical."

He kindly refers to a passage on this subject in my "Christmas Greeting," and I think I must ask space to give a few words of explanation.

First, I alluded only to Apple trees planted in vegetable gardens and not growing on grass. Secondly, only to old trees of inferior varieties and which cropped badly. I am fully aware of the value of old and good trees, but in this part of England in cottage and farm gardens, as a rule, the Apple trees are of local and inferior varieties. When I see old straggling, moss-grown, useless, or half-useless, trees shading a bit of land which but for them would grow vegetables that would go towards many a dinner for a cottager's family, I always urge their removal; but I am met with the "Conservative" objection—"Well, there now, sir, they have been there this many a year." And so the trees remain.

The two trees that paid the rent of the cottage mentioned by "RADICAL CONSERVATIVE" were the opposite to these; and his loss partly arose, as I think he seems to imply, by having his dozen pyramids of various sorts and not of one or two.

Having become much interested in hardy fruits I seldom pass a tree, or see an Apple or a Pear, without taking special note of them. As with Roses so with Apples, handsome and good varieties will no doubt find their way into small gardens, and these will be more profitable. Why is the Blenheim Pipin so popular? Because it is beautiful as well as useful. I would that in all fruit catalogues Apples should be specially marked as "handsome and useful." Soft wretched Apples, neither good to eat nor good to cook, and having no good looks to recommend them, are still—in this part of England at least—far too commonly met with. "An Apple is an Apple" still with many, and I desire to see an improvement in this branch of horticulture. I do not speak of large trees in orchards, but of small trees in kitchen gardens, specially in the gardens of the poor. Handsome and good fruit would command a better price, and the neatly-dressed cottager's child with her basket of such fruit would bring home "more money to mother" than such as are generally grown. But how is this to be accomplished? Orchard trees are long in becoming productive, so I again say by recommending pyramids.

Passing by small gardens, I am inclined to think that Apples are not thought enough of even in large gardens. Upon inquiry I often have the answer that—"We are not well-off for Apple trees." This should not be, now that good varieties are easily to be had and when fruit-growing has become an art.

"RADICAL CONSERVATIVE" speaks of trees not coming "true to name." This is most vexing, but perhaps to be excused at "an auction sale." I have my tale to tell on this subject. About twenty years ago when I came to this place I found the garden in a bad condition as to trees, so sought out a neighbouring nurseryman. (I like to deal with my neighbours. I go to no Civil Service stores on principle. Live and let live—not kill tradesmen—is my rule.) I ordered named Gooseberries of different colours. I like the contrast of colour on a dessert-dish. I ordered Plum and Apple trees, and one specially—a Junceating for my children, remembering how I liked that early toothsome Apple when I was a boy. Well, hear the result. My Gooseberries proved all of one colour; Coe's Golden Drop Plum came a small, poor, yellow Plum of bad flavour; and my Junceating turned out to be a Hawthornden, which I already had. Mark you, all these trees bore their labels white and flaunting on them. N.B.—I did not trouble that nurseryman again, especially when on my complaining he said—"One sort is just as good as t'other." I feel bound to say since the old man's death his nursery, in the care of a young enterprising man, is conducted on wholly different principles to the anything-will-do system. However, to continue my story, being determined recently to renew my garden and wishing to be quite sure this time, I had my trees from Mr. Richard Smith

of Worcester, knowing that every tree from him would come "true to name."

Leaving orchards quite out of the question, I am sure that the cultivation of hardy fruits in gardens of moderate dimensions, and I may add by amateurs of moderate means—in fact, in such gardens as are usually attached to the parsonage, and by men of such means as the general run of clergy are—is a very agreeable pastime, adds interest to a garden, and pays its expenses. We have not all vineries or even greenhouses, but we clergy in the country have all of us gardens walled or unwall'd; if the former all the better, if the latter we can take refuge in pyramid Apple, Pear, Plum and Cherry trees, and mark and watch their growth and progress; take notes of appearance and flavour; fill up many a spare minute profitably and healthfully in the open air; and, more than all, increase our knowledge; and an increase of knowledge always brings an increase of pleasure. This is what I seek for myself, and this is what I wish others to enjoy as well as myself. The country is never dull to those who have eyes and well use them, and active minds that are always adding to the knowledge of their owners.—WILTSHIRE RECTOR.

I FEEL considerable diffidence in sending my opinion on the subject of old trees, because I am not by any means a learned gardener, and have never before written on any subject belonging to the profession. If you were to take me into a conservatory I should probably not know the names of one-fourth of the plants therein; but I was born in a large orchard and lived in it, I might say, for the first twenty-five years of my life. I began to prune Apple trees, &c., as soon as ever I could use a tiny saw, my father standing below and giving orders.

Now I must say that I entirely agree with "RADICAL CONSERVATIVE" in all he has said on this subject, and I must venture to differ with Mr. Robson, because my experience has taught me that an old tree if healthy in the trunk and main branches may often be grafted and form a fine tree, and bear first-class fruit in far less time than similar fruit can be had by planting new trees. For instance, the only trees we had of Blenheim Pipin were grafted on old stocks; I cannot remember the time they were grafted, but before I was old enough to notice such things, but when I left them they were large trees bearing good crops of the finest fruit I ever saw.

Again, we had a row of Manks Codlins which produced plenty of fruit, but so small as not to be worth gathering; they were knotted, and gnarled, and eaten up with American bug, but on being "buckheaded," as we used to call it, and the stumps well dressed with lime, soot, cow dung, &c., they threw out strong shoots and a great many of them—of course the weakest were "rubbed out"—and in a very few years they were fine healthy trees, bearing good-sized clean fruit fit to go anywhere.

I know one tree of a kind known in the east-midland counties as Normanton Wonder (What is it called elsewhere? In my opinion the best winter Apple for kitchen use grown).—[Dumelow's Seedling and Wellington.—Eds.] It was blown down flat to the ground, and although the trunk was nearly 18 inches in diameter the top was cut off, and the stem reared upright and securely propped, and when I saw it last it had grown sufficiently to produce about thirty pecks of as fine fruit as anyone need wish to send to market.

I could multiply examples on this subject if it would do any good, but space and time will not allow. My advice to any who have standard fruit trees is this—If of a good kind, but growing small fruit, "buckhead" them, and if you wish to change the sort graft them with something else, only mind that it is something better. A very few years will show whether they will make good trees again or not, and then when you have tried them, if they do not promise fairly, say, "Cut them down. Why cumber they the ground?"

I may add that I had some Damson trees that had been "buckheaded," and they had grown again into large trees bearing splendid fruit.—J. J., Lancashire.

THE REV. H. COTTINGHAM'S GRAPES.

EVERYONE who cultivates a garden as a source of relaxation and pleasure has some object of which he makes a special hobby. There are not a few who "go in" for Roses and bestow on this queen of flowers unremitting attention. Others, not so refined in their tastes, and who wish to blend the useful with the ornamental, have a fancy for growing certain

vegetables, such as Onions, Leeks, and Celery; while not a few who can raise a glass house, however small, make the Vine a special object of culture. I have known tradesmen, in the midst of a thickly populated town, surrounded by high brick walls, with only space at command for a house 10 or 12 feet square, and a few feet outside for a border, who have produced Grapes both in size and finish that would grace the table of a duke.

A short time ago I saw the splendid crop of Grapes in the gardens of the Rev. H. Cottingham, Rector of Heath, near

Chesterfield, and I can safely say that scarcely finer Grapes could be found within a radius of 100 miles. Mr. Cottingham is an amateur in the strictest sense of the term, not employing any skilled labour; but he is an amateur of no mean order, and I place this instance of success on record to stimulate those who have hitherto failed in the culture of the Vine, and to encourage those amateurs who would be pleased to grow a few Grapes but dare not embark in their cultivation.

The village of Heath is pleasantly situated on the brow of a lofty hill, about $4\frac{1}{2}$ miles from Chesterfield and $7\frac{1}{2}$ miles from



Fig. 25.—THE REV. H. COTTINGHAM'S GRAPES.

Mansfield. It is a neat agricultural village, and the church is a handsome stone building, and has a tower surmounted by a fine spire and set of bells. From the drawing room and flower garden of Mr. Cottingham we obtain charming views of Hardwick Hall and the park, with its venerable Oaks. Turn in which direction we may the whole scene is full of interest.

Adjacent to the drawing-room is the well-kept lawn, and at convenient distances from the windows there are fine specimens of *Cedrus Deodara*; also groups of golden Yews and variegated Hollies. These, as the late Sir Joseph Paxton used to say, are the chandeliers of the pleasure ground, and truly they give beauty and interest to the garden at this dull season, when the destructive 'Ice King' has laid prostrate all its floral treasures.

It was, however, the vineries I went to see and the magnificent Grapes. The Vine-houses at Heath are not of large dimensions, both together being 60 feet in length, with a glass partition in the centre. They are 18 and 10 feet high, and heated with hot water. One house was built and planted twelve years ago, and the other was added and planted two years later. The border for the first planted Vines is on the outside of the house, and the latter planted Vines had a border both inside and outside. It is worthy of remark here that those Vines planted in the border outside have always been very much superior to those planted in the inside border. This is rather damaging to the theory of many of our celebrated writers on the Vine, who recommend so strongly that Vine borders should be made within the house in this our vari-

able and uncertain climate. However, the first planted Vines were so much superior to the last planted canes that the worthy Rector last spring resolved to uproot the latter, make a fresh border, and commence with new Vines. The roots of some adjoining Beech trees had also found their way into the border, and they were appropriating the food which otherwise ought to have gone to the sustenance of the Vines.

The new border is formed of much the same material as the old one, being composed of good sound turf, broken bones, charcoal, and old mortar rubbish. To one load of turf was added one peck of bones, half a peck of charcoal, and a proportionate quantity of old mortar. The border is concreted underneath, that is covered with 1 foot thick of broken stones, and then the above compost. The new Vines were struck from eyes in February, planted in May, and after they had reached the top of the house and gone to rest they were cut down within several inches of the ground. The sorts planted were one Golden Queen, two Black Hamburgs, one Madresfield Court, and one Gros Colman. Among those that remain are Black Hamburgh, Muscat of Alexandria, Canon Hall Muscat, Pearson's Alicante, and Barbarossa.

When the Vines were young it was not unusual for the bunches of Barbarossa to weigh 9 or 10 lbs. each, Muscat of Alexandria 8 lbs., and Alicante 6 or 7 lbs. On the 18th of January there were some fine bunches still hanging. The Muscats were a fine amber colour, and the bunches would be nearly 4 lbs. each, Alicante 3 lbs. each, and the Barbarossa would be about 7 lbs. each; the berries plump and perfect, and they looked as if they would hang for months to come. Mr. Cottingham evidently brings a vast amount of skill to bear upon the culture of the Vine. He treats it in a common-sense sort of way, and duly receives his reward. I have many times visited places of much larger pretensions, but never where more satisfactory results were accomplished.—R.

P.S.—The engraving represents the Vines when both houses were in full bearing.

TRAINING YOUNG FRUIT TREES.

MR. DOUGLAS on page 59 has given instructions on the training of young Pear trees on the horizontal cordon system, recommending it as the best mode of training for these trees. His instructions are to take the central shoot upwards and to train the side shoots along the brick courses, stopping also the leading shoot in the summer, and so obtaining two or more pairs of side shoots the same season. That is a valuable hint which will not be lost by those who have healthy young wall trees. Too often the tall central shoot is left until the winter pruning, then to be cut away after having done its work by appropriating the strength from the side shoots and wasting the energies of the trees.

But yet I think it is not well that the instructions given by Mr. Douglas be followed literally. The horizontal system may be the best mode of training the branches of Pear trees, but is not the best, I think, when the trees are young. With some trees of exceptional vigour the system is perhaps not very objectionable, but with ordinary trees it is not the quickest, but perhaps the slowest mode of covering a wall to train the branches of young trees horizontally.

The first trees that I nailed were young Pears trained along the seam-courses, and after seven years the wall was not half covered. To induce a free growth the fan system of training is much preferable to the horizontal, lowering the branches by degrees as the trees gain strength. I have very little doubt—indeed I have tested it by direct experiment—that by training the branches more or less upright for the first four or five years of the tree's growth that a great gain is effected in covering a given space of wall. The branches can be brought down as required, and when the trees have attained a considerable size, and the depression will probably expedite their fruitfulness.

In training young trees a point of the greatest moment is to secure the extension of the lower branches and to keep them in advance of the branches above them. It is very difficult to do this by a rigid adherence to the horizontal training of the branches along the seams of the wall, and especially when the trees are young. If, as is often the case, the lower pairs of branches do not make the same lateral extension as the branches above them when the trees are young, the wall cannot be well furnished afterwards. The most effectual way to prevent this is to train the weaker branches more or less upright, depressing the stronger growers. By a systematic mode of

elevation and depression a correct balance of the tree can be attained, and I am not aware that it can be secured by any other means.

To induce a free growth of wall trees in their young state, and to cover space in the quickest manner, I have invariably found great advantage in training on the fan-shape system, keeping the weaker parts more or less upright and giving special attention that the lower branches are kept well in advance of the parts above them. By five years' training on this system with a wall of Pear trees, and then bringing the branches to the horizontal positions, I have produced much larger and healthier trees than some others that were trained horizontally from the time of planting.

I have no doubt that many others have also noted the advantage of the fan over the horizontal training of Pear trees in their young state, for there can be no doubt that it does possess advantages of practical importance and which should not be overlooked.—A NORTHERN GARDENER.

NEW BOOK.

Domestic Floriculture, Window Gardening, and Floral Decorations. By F. W. BURBIDGE. With Illustrations.

This second edition is enlarged, and is deserving of purchase by everyone who wishes for good information on the subjects of which it treats. We shall only extract an historical portion:—

"The science and art of window gardening, as well as the use of decorative plants in apartments, is, as yet, in its infancy, and its early history seems shrouded in obscurity, although fifty years ago plants were commonly grown in cottage windows, those more generally employed being *Fuchsia globosa*, Fair Helen Geranium, Musk, several *Mesembryanthemums*, Cactuses, and crimson China Roses. More recently, the newer varieties of *Calceolarias*, *Fuchsias*, *Campanulas*, *Balsams*, and *Pelargoniums* have been employed; while, at the present time, we employ Figs, Palms, Ferns, and the very choicest of exotic plants for the indoor decoration of our dwellings, amid the dust and bustle of the busy city. Domestic floriculture exerts an influence that contributes much to our comfort and happiness in the smoky atmosphere of a town residence. Looking at the subject from a commercial point of view, we find many large establishments devoted entirely to the culture of decorative plants in small pots, while thousands of pounds are spent yearly in London for the pretty little decorative plants so often met with in the window cases and apartments of town mansions. We look on the decoration of our dwellings with healthy plants and fragrant blossoms as the sign of a more healthy appreciation of nature, as the embodiment of all that is beautiful and attainable in art.

"Amongst the oldest and best-known window plants used in this country of late years, we may mention *Fuchsias* and *Hydrangeas* (which latter occasionally astonished their possessors by bearing blue flowers in place of rose-coloured ones). *Tusilago fragrans* is also mentioned as being 'planted in pots for the purpose of perfuming winter apartments;' while *Cyclamens*, *Auriculas*, and *Myrtles* were common many years ago. *Richardia æthiopica*, or Lily of the Nile, was grown by Miller in the Chelsea Botanic Garden as early as 1731; and in the '*Flora Historica*' (1824) we read that 'the more polished part of society admit the Ethiopian Calla, a species of Arum, into their most embellished saloons, where its alabaster calyx expands into so elegant a vase-like shape, that Flora seems to have intended it for the hand of Hebe, when she presents the imperial nectar to Jove,' adding that 'the fashion of ornamenting the houses in London with plants when routs are given greatly contributed to bring it into celebrity, and as a conspicuous candle-light plant it was therefore increased by all rout-furnishing florists.' *Campanula pyramidalis* was also an extremely popular window plant fifty or sixty years ago, being frequently employed by country people then as now to decorate their windows; or when trained round a hoop, or into the shape of a fan, it sometimes served as a screen 'to the rustic grate of a country parlour.' This is the 'Steeple Milky Ball-flower' of Gerard, and has been grown in our gardens nearly three hundred years.

"Cowper, in the 'Task,' celebrates *Mignonette* as a favourite window plant in London during the latter part of the last century—

"The snakes fronted with a range
Of Orange, Myrtle, or the fragrant weed;"

and Philips in his '*Flora Historica*' says, 'We have frequently found the perfume of the *Mignonette* so powerful in some of the better streets of London, that we have considered it sufficient to protect the inhabitants from those effluvia which bring disorders in the air.' The latter statement is remarkable, inasmuch as recent researches prove the beneficial influence exerted not only by this but by many other odorous flowers; and we

are now recommended to plant Sunflowers (*Helianthus*), and the Fever or Blue Gum Tree of Australia (*Eucalyptus*), as a preventive of pestilential diseases in marshy or malarious localities.

"Chrysanthemums were introduced in 1764, and again in 1795, and, like the Roses of China, the Chrysanthemums soon escaped from the conservatories of the curious, and as rapidly spread themselves over every part of the island, filling the casements of the cottagers with their autumnal beauties." It is rather singular to find that the 'Winter Cherry' (*Physalis alkekengi*) has been grown in our gardens as a decorative plant since 1548, or above three hundred years ago; and it appears to have been commonly grown in the time of Gerard, who quaintly tells us that 'the Redde Winter Cherrie groweth vpon olde broken wals about the borders of fieldes, and in moist shadowy places, where some conserve it for the beaultie of its berries, and others for the great and worthy vertues thereof.'

"Phillips, writing in 1824, says, 'At present the berries are seldom used with us, excepting to mingle in bouquets of dried flowers, or to ornament the chimney-pieces of cottage parlours.'

"*Lobelia* of the *L. cardinalis* section were esteemed many years ago as window plants, and China Asters were also used occasionally in pots and boxes for a like purpose; while the Blue Throatwort (*Trachelium cornutum*) was often used as a decorative plant, not only in pots, but also partially naturalised on old walls, along with Snapdragons (*Antirrhinum*) and Wall-flowers (*Cheranthus*).

"*Balsams* (*Impatiens*) have been grown in our gardens for the last three hundred years, and have long been esteemed as decorative window plants by cottage florists.

"*Convolvuli*, both *C. tricolor* and *C. major*, were known in the time of Charles I.; for Parkinson (1629) tells us that he received seeds of the former out of Spain, and that the flowers are 'of a most excellent skie-coloured blew, so pleasant to behold that often it amazeth the spectator.'

"*Succulents*, as *Phyllocactus* ("Cactuses"), Cape Aloe, more especially the well-known *A. variegata* introduced in 1730, and many species of *Mesembryanthemums*, have long been cultivated in cottage windows. Another old sweet-scented favourite, *Aloysia citrodora*, was introduced in 1784, and is still very generally grown as a decorative plant; while some of the earliest varieties of fancy or hybrid *Geraniums* (*Pelargonium*) soon found their way from the gardens of the florist or wealthy amateur into cottage windows, where their more beautiful representatives still remain.

"The well-known "Aaron's-beard" (*Saxifraga sarmentosa*) was introduced from China in 1771, and is still one of the most popular of all window plants on account of its free habit of growth and vivacious mode of reproducing itself. Many more examples might be given, but the above rough sketch is sufficient for our present purpose. We have shown the custom of employing flowers and living plants for purposes of domestic and personal ornament to be an old one; while at the present time they speak a language peculiarly their own, and enter largely into the expression of the joys and sorrows, the light and shade, of our everyday existence. Window-gardening has spread from humble cottages to the mansions in our busy towns, and on all sides we have societies fostering a love for the more extended culture of decorative plants among all classes of society. The indoor cultivation of plants and flowers has especial attractions for the invalid, and the interesting employment thus afforded serves to brighten or while away many a tedious hour. Even a few cut flowers and fresh leaves or sweet-smelling herbs kept in water, afford relief to the eye of the sufferer, and help to divert it from wandering over the cheerless walls of the hospital, or from peering into the deep shadows of the sick room.

"The pure and lasting taste for beautiful plants and flowers, if firmly implanted in the human mind, almost invariably exerts its beneficial influence for good; hence gardening ought to be made use of in connection with all our public schools as an educational appliance of the highest possible value. In Sweden the elements of horticulture are systematically taught in all government schools; and we believe great results would follow, from a national point of view, if the rudiments of gardening and its sister art farming were practically taught in this country more generally than is at present the case.

"Throughout France, again, gardening is practically taught in the primary and elementary schools. There are at present 28,000 of these schools, each of which has a garden attached to it, and is under the care of a master who can impart a knowledge of the first principles of horticulture. Even in the schools to which no garden is attached the theory of cultivation is taught; but it has recently been decided by the Minister of Public Instruction that the number of school gardens should be largely increased, and that no one shall be appointed master of an elementary school unless he can prove himself to be capable of giving practical instruction in the culture of the soil.

"Many who have no little garden wherein to grow a few sweet-scented flowers, yet manage to extemporise ways and

means to gratify the love of nature, which appears to be nearly universal. Window gardening has doubtless been practised for centuries under difficulties, and the garden poet alludes to the practice in the following lines:—

"There the pitcher stands
A fragment, and the spoutless teapot there;
Sad witnesses how close-pent man regrets
The country, with what ardour he contrives
A peep at nature when he can no more."—COWPER.

ROOT-GRAFTING STONE FRUITS.

It is common in root-grafting the Apple to make two or three stocks from one seedling root. This manner does not work so well in the case of stone fruits. I find no difficulty, however, in root-grafting stone fruits. For the Peach, Plum, and Apricot I use the wild Plum for a stock. I take up the seedling Plums in the autumn, being careful to break off as few of the small fibrous roots as possible. I put them in a cool cellar, packed in earth, and leave them there until I wish to use them during the winter. When these roots are grafted I keep them moist and do not expose to cold. I use the whole root of the seedling, from 6 inches to a foot long to make one root-graft, whip grafting near the collar. The grafted roots are then packed in earth, in the cellar, to be planted out, after the ground has ceased to freeze, in the spring. The success or failure depends greatly upon the amount of small roots upon the seedling stocks. Stocks that have been once transplanted are still more certain to grow when root-grafted.

This past spring (1875) I did some grafting with scions and stocks which had stood out all winter and had been exposed to a temperature of 26° below zero. After the ground thawed I took up the Plum stocks and whip-grafted them with Peach and Plum scions just cut from the trees. They were then put in the cellar until it was safe to plant them out. Nearly all made a good growth, particularly the Peaches and Plums.—THEO. WILLIAMS, Nebraska.—(*American Prairie Farmer*.)

NOTES ON VILLA AND SUBURBAN GARDENING.

BEDDING PLANTS.—With the month of February comes a necessity for greater activity among the stock of bedding plants, and preparations must be made for potting off the stock of old plants that have been kept in close quarters since autumn. Where several cuttings have been inserted in a pot or box together it is not well that they make many fresh roots before being potted, as the process of separation mutilates them so much that they do not become speedily re-established. After potting afford the plants an increase of temperature, and when doing well remove them to a cooler structure, which will make room for others from the stores.

It will be necessary to increase the stock of many plants by striking cuttings, and for this purpose the plants must be placed in a genial temperature to induce their free and healthy growth. In inserting cuttings special care is needful that they are perfectly free from aphides, thrips, or other insects; for it is astonishing how soon the young growth becomes infested, and fumigation must be a frequent operation, with a moist atmosphere, to prevent the inroads of red spider.

If there is no regular propagating place a dung bed must be made up, and a frame placed upon it. If a bottom heat of 60° can be secured, it will be sufficient for the pots to be plunged in. As a plunging medium some use sawdust, others old dried tan, while a bed of leaves, if they are packed closely round the pots, will answer well.

The cuttings must be inserted as they can be had, for it is not always possible to secure a very large batch at the same time; they must be well fastened in the soil and must not be moved until they are rooted. A good plan of procedure is to well drain some small pots and fill them to within an inch of the top, pressing the soil down moderately firmly, and over this place about an inch of silver sand, watering with a very fine rose until the sand begins to throw the water off. The moment the water has passed through the sand and has soaked away, the cuttings should be inserted, using no stick to make holes with, but pressing in the stem of each cutting with the thumb and finger, which is an easy matter as the sand is soft. The pots when filled should be gently watered, and the settling of the particles of sand will fasten the cuttings. As soon as the pots have drained off they may be placed in the frame.

When the cuttings start into growth after rooting, pinch out their points, which will, in turn, make cuttings if required. As soon as roots are emitted the young plants should be removed to a cooler temperature, and when side shoots spring out the plants may be divided and potted, and grown-on for a time, then gradually hardened off into cool frames. In the case of small plants such as Verbenas, one pot will root from thirty to fifty cuttings.

There is no occasion to trim the cuttings to a joint, but where this is not done care must be taken that the first joint next above the foot of the cutting touches the surface, for although the stem will emit roots, the principal roots will come from the joint.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

The fruit buds do not seem to be very prominent on either Apple or Pear trees in the open garden, and there is every appearance of a late blossoming season. There is not much required amongst the trees at present, the ground between them had a coating of manure a few weeks ago, which is now being lightly forked-in. The Raspberry quarter is receiving the same treatment. Some persons would recommend not to dig-in the manure at all, but allow it to lay on the surface all through the summer months. Both plans have been tried here, but forking the ground over meets with the greatest approval. It has neatness in its favour, and the trees seem to thrive quite as well one way as the other. If the weather sets in very hot and dry next summer, and it becomes necessary to water the trees, then a mulching of half-rotted manure applied to the surface and left on would arrest evaporation, and be productive of good results.

Pruning and nailing the trees on walls should be forwarded without any delay, leaving Peach and Nectarine trees to the last. Planting should be finished as expeditiously as possible. The trees should be even more carefully lifted at this season than in the autumn, saving all the fibrous roots, and the ground should be ready for them as soon as they arrive from the nursery.

We shall run the hoe through the ground between the rows of Strawberry plants in the open quarters, for the seeds of weeds are introduced amongst the loam used in planting, even if the ground is otherwise free from them.

VINERIES.

We are cleaning and otherwise preparing the late houses for the starting of the Vines. We have out a good many bunches before pruning and hung them up in the fruit-room with the ends of the laterals in water. Upon the whole the late Grapes with us are not keeping nearly so well as usual; even with Lady Downe's Seedling some of the footstalks of the berries have decayed, and other sorts have shrank badly. We have been truly glad of an hour or two of sunshine on several days last week, the effect of it seems to be already visible on the early Vines; it allowed the ventilators to be opened a little more, which must add strength to the young and tender shoots.

Those who desire to have ripe Grapes about the end of April will now be thinning-out the berries. Many persons do this at twice, a portion now and the remainder just before the stoning period. This is not good gardening, the gardener who is up to his work will know at what size the berries will swell, and remove all that is required at the first thinning. The berries should be thinned-out at the earliest stage possible. We usually begin to thin about nine or ten days from the time the first flowers open.

If the eyes intended to produce fruiting canes this year are not yet put in heat, the sooner this is done the better. A bottom heat of 85° with a temperature of 55° for the atmosphere of the house, is the most suitable. The pots should not be watered from the time they are placed in heat until the Vines are above ground. If the soil becomes so dry that it is necessary to water them, it is very probable that many will not start at all.

PEACH HOUSE.

We alluded on the last occasion to trees in blossom, and urged the importance of setting the fruit by artificial means, shaking the branches and dusting the pollen from the anthers to the stigma of the best flowers on some of the shoots. Disbudding must now be proceeded with; a very large proportion of the young shoots may be rubbed off, leaving one near the base of the last year wood, training one for a leader and another on the opposite side to the one selected near the base. The fruit may also be thinned-out, leaving the largest equally placed over the trees.

As soon as the fruit is all set the syringing of the trees that was necessarily suspended during the flowering period should now be continued vigorously. Rain water that has been in pots standing on the hot-water pipes should be used. The Peach trees do not suffer so much from draughts of cold air as Vines, but it is far the best not to subject the trees to this influence. Late houses are very useful for bedding plants, and as much air may be admitted as possible to keep the trees back until it is time to remove the plants to temporary shelters out of doors.

MUSHROOM HOUSE.

It is not worth while to say anything about the making-up of the beds, as this was fully entered into at the end of last year. We would urge the importance of a fair degree of moisture in the beds before spawning, and also allowing the beds to cool down before inserting the spawn. The heat of the bed should

not be more than 85°; the spawn is often injured by too much, but seldom by too little heat. Some clean straw placed on the surface helps greatly to maintain an equable temperature. A moderately-moist atmosphere with a temperature of 55° is most congenial to the Mushrooms. It ought also to be noted that a dry atmosphere causes the produce to be leathery in texture.

CUCUMBER HOUSE.

It was here stated that Cucumber seeds were sown in the last week of December, and that the plants were potted three weeks after in small pots. They have again been repotted into larger pots and placed quite near the glass in a night temperature of 65°. It is better to grow the plants on like this than it is to plant them out before they are strong. We shall grow them on in pots until the plants are about 18 inches in height. It is of the greatest importance to keep them free from insect pests. Thrips and green fly are easily destroyed by fumigation, red spider by syringing. The plants will grow slowly for a few weeks, but we promote growth as much as possible by shutting up at 2 p.m., and as the days have been bright the temperature is up to 75° or 80° for several hours afterwards.

GREENHOUSE AND CONSERVATORY.

It is scarcely possible to grow hardwooded plants well in a house that has to be used as a show house for forced plants from Christmas or earlier until May. Plants that are removed from a forcing house to one where air is so freely admitted as it ought to be where hardwooded plants are grown would suffer by the sudden change; to restrict the injury the house may be kept closer for a day or two, but in a few days more fresh plants are brought in and it is necessary to frequently close the ventilators when they ought to be open for the more hardy plants. The heating apparatus is also very much oftener in use than it ought to be. It is not necessary to apply heat for a degree or two of frost, especially if the house was shut up with sun heat. We would rather see the thermometer down at 35° than up at 45° on a cold night.

Cinerarias are making good growth now, the plants must on no account suffer for want of water, nor the least trace of green fly or thrips be allowed upon the leaves. The Cineraria is a comparatively hardy plant, but it must not be subjected to a temperature below 35°. We had a number of plants much injured with the thermometer at 38°, the plants were closer to the glass than the thermometer, and were, no doubt, in a still lower temperature.

We shall in the course of a week or ten days report the stage *Pelargonium*. These plants are very often over-potted. A plant that will produce a dozen nice trusses of flowers in a 5-inch pot, would run more to leaf in a 6-inch pot and might not give half so many flowers. A pot 6 inches in diameter is large enough for a good-sized plant, and one 8 inches will do for the largest. We use good clayey loam, one-fifth of rotted cow manure, leaf mould in the same proportion, and enough white sand to keep the compost porous. It is not easy to say how much sand, as some loams are much more sandy than others. Drain the pots well, placing some tough fibre, from which the clayey portion has been shaken out, over the drainage.

Hardwooded plants may also be repotted if they require it. Good, tough, fibrous peat is the staple material for nearly the whole of them; it must not be sour stuff obtained from marsh land, but the top spit from upland moor or pasture, that containing sharp white sand and naturally is the best. The potting of hardwooded plants must be much more carefully performed than that of softwooded plants. The pots must be quite clean and well drained, and what is sometimes neglected, the drainage must be kept clear by placing some fibre carefully over it before putting in any of the compost. Pure sandy peat is essential for Heaths, Epacrises, Azaleas, Lapagerias, Rhododendrons, Dracophyllums, and Dillwynias. Most other plants require turfy loam in the proportion of one-third.

The state of the roots should be a guide as to the size of pots to be used. If the plants are well rooted and of robust growth they may have a shift of 2 inches; if the roots are in bad order it may be necessary to reduce the ball and repot in the same sized pot, or one even smaller than that in which the plant was growing before. The roots ought to be moderately moist before turning the plants out. The compost to be used should be the same, a very dry compost is about equally injurious to one over-moist. The plants must be potted firmly, if the compost is not rammed in pretty tight when the plant is watered the water passes through it without moistening the ball. It is better at this season not to apply any water to hardwooded plants for a week or ten days after repotting.

Some plants may be placed in heat with advantage. *Statice Holfordii* and *Pleroma elegans* does well in a temperature of 50° or 55° at night.

We shall put in cuttings of the *Perpetual-flowering Carnations* this week; they strike well in a frame with a little bottom heat. The very small side-growths are the best. About a dozen of them may be inserted in a 5-inch pot; the soil should be equal parts of loam and leaf-mould with a little sand mixed with it; a layer of sharp sand should also be placed on the surface of

the pot. Some varieties strike roots much sooner than others; the Perpetual-flowering Plootees, Prince of Orange, and Asot Yellow are the most difficult. We generally propagate them from layers. It is necessary to put in the cuttings of these useful Carnations thus early, so that the plants may be of large flowering size before they are taken into the house for the winter.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

BRIXTOL (Spring Show). March 22nd and 23rd. Mr. G. Webley, Holm Wood, Westbury-upon-Trym, Hon. Sec.
ROYAL CALDERDALE HORTICULTURAL SOCIETY. Shows April 5th, July 5th, and September 15th.
WESTMINSTER AQUARIUM. April 12th and 13th, May 10th and 11th, May 20th and 21st, July 5th and 6th, October 4th and 5th.
SOUTHAMPTON (Roses). June 5th, and August 5th and 7th. Mr. C. S. Fudge, 59, York Street, Sec.
MAIDSTONE (Roses). June 21st. Mr. Hubert Bansted, Rockstow, Maidstone, Sec.
SPALDING. June 21st. Mr. G. Kingston, Sec.
RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.
SOUTHPORT. July 6th, 7th, and 8th. Mr. E. Martin, Sec.
HELENBURGH (Roses). July 12th and 13th. Mr. J. Mitchell, Sec.
BRIGHTON. July 29th. Messrs. C. Jessop & E. Rawnsley, Hon. Secs.
SHARON BURN. August 26th. Mr. B. Richardson and Mr. W. Elliott, Secs.
DUNDUM (International). September 7th, 8th, and 9th. Mr. W. R. McKelvie, 26, Enfield Crescent, Sec.

TRADE CATALOGUES RECEIVED.

John Laing, Stanstead Park Nurseries, Forest Hill, London, S.E.—*Catalogue of Garden, Flower, and Farm Seeds, Implements, &c.*

Wood & Ingram, Huntingdon.—*Select List of Garden and Agricultural Seeds.*

Little & Ballantyne, Carlisle.—*Illustrated Spring Seed Guide and General Catalogue.*

Brunning & Co., The Nurseries, Great Yarmouth.—*Illustrated Seed Catalogue with Select List of Gladioli.*

Stuart & Mead, Kelso.—*Illustrated Catalogue of Seeds and Roots, and Select List of Gladioli.*

Richard Bradley & Sons, Halam, near Southwell, Notts.—*Catalogues of Roses and General Nursery Stock.*

David Gold McKay, Market Hill, Sudbury, Suffolk.—*Catalogue of Seeds, Gladioli, and Garden Esquisses.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

OVERCHARGE FOR THIS JOURNAL (W. F.).—Your bookseller was wrong. No extra charge was made by us for the Title and Index.

BOOK ON FLORICULTURE (T. L. B.).—There is no standard work on floriculture, giving detailed and precise instructions. Such a work would require to be extremely voluminous, and be too costly for the acceptance of horticulturists generally. Our "Florists' Flowers," 5d.; "Indoor and Outdoor Gardening," 1s. 7d. each; "Greenhouse Manual," 10d., and the "Cottage Gardener's Dictionary," 7s. 2d., would give you all the information required. They may be had free by post from our office at the prices named.

FELTON PARK (Miss A.).—Near Acklington, Northumberland.

EXAMINATION OF GARDENERS (J. A. S.).—We are informed that there will be no examination this year by the Royal Horticultural Society.

PEAR SCIONS ON APPLE STOCKS (W. Sanders).—Pear scions will unite to Paradise Apple stocks, but they will not live.

GARDEN PLANS (Alpha).—We know of no work for your purpose. There are very many plans in our back volumes which you could draw from, and learn there how they were effectively planted.

HOLLY HEDGE (H. K. L.).—You ask what distance apart should the "trees" be planted? The question must be decided entirely by their size. We have planted them when small at 6 inches apart, and when larger at 2 feet distances, and the hedges now are equally good. Loosen the soil well and plant so that the foliage of one "tree" touches that of the other without any crowding or pressing. To insure uniformity of growth we should plant solely the common green Holly, on which when the hedge has attained nearly its full size, variegated sorts may be grafted at intervals for ornamental effect.

STOVE AND GREENHOUSE ARRANGEMENT (E. H. D.).—We presume you have a duplicate copy of the queries you have submitted. No. 1, Yes. 2, Have 4-inch pipes. 3, Add a foot of tan or fermenting manure and leaves, and on this place a foot of soil for Cucumbers. For plunging plants use tan or

coco-nut fibre. 4, Ample for the greenhouse. 5, It is much preferable. 6, If the coke supply is constant a tubular; if not, a saddle. 7, Yes, it will do very well. On the point of piping arrangement and other practical matters you would find the advice of a neighbouring gardener valuable. Invite a man of ability to half an hour's discussion on the spot. In fixing hot-water pipes the flow-pipe should be taken from the top of the boiler and rise gradually to the highest point, and then return with an easy decline to the bottom of the boiler, the pipes in no part sinking below the bottom of the boiler. At the highest point in the piping insert an air-pipe, and the boiler feed cistern should be level with the highest part of the piping, the pipe from the cistern entering the boiler at the bottom, or, which is often more convenient, entering the return-pipe close to the boiler.

DESTROYING AMERICAN BLIGHT (T. Hogg).—This destructive pest is not a bug, but an aphid—viz., *Aphis lanigera*. It is best prevented and destroyed by dressing the trees infested with paraffin oil, applying with a brush, more particularly to the excrescences caused by the aphid in the bark, brushing it well into those parts and the angles and crevices. It is best done in March, or before the buds commence growing, but may be applied during growth to the parts attacked, keeping from the foliage.

BLUE LOBELIA (J. P.).—There is no better than a good strain of *Lobelia speciosa*; we find nothing better than Vetch's strain, Crystal Palace compacta being very good. Last season was a very unfavourable one for Lobelias.

HARDINESS OF *CRYPTOMERIA ALLEGANS* (Idem).—It has stood unharmed in a high and exposed situation several winters, and would no doubt succeed as a specimen tree in a park, but would need to be fenced against cattle, and made proof against hares and rabbits, the hares leaping with us netting 80 inches high. Upon the spray of the *Cryptomeria* they feed greedily. It is a very graceful tree of deep chocolate tint.

REPORTING HOLLIERS (W. Berry).—Turn the plants out of the pots at the close of March, and remove with a pointed stick all the soil that can be picked out from the roots without injuring the fibres; or if the soil be in a sodden state and the roots few remove all the soil, and in repotting work the soil in amongst and between the roots, not crowding them together, but spreading evenly through the soil, keeping the settling-on of the roots or the neck of the plants level with the rim of the pots, potting moderately firmly, leaving space below the rim for watering of about an inch. Good drainage should be provided, and a compost of rather strong fibrous loam, with a fourth of well-rotted manure, will grow them well. Plunge in ashes in a slightly shaded situation, sprinkling overhead twice a day in dry weather until they are growing freely, but do not water at the roots more than to keep the soil moist, and when established remove to an open situation, watering freely as the growth progresses, and always keeping moist.

POTTING CAMELLIAS (T. L. B.).—It may be done directly after the flowering period, or before fresh growth is made, and any pruning required should be done at the same time. If the pruning be at all free the plants will need to be placed in moist heat to secure their breaking freely. The potting may also be performed in late August or early September, the buds being then well formed. We usually prefer the latter time for potting, the roots being in a healthy state; but if much removal of soil is necessary, the roots being in a bad state, spring potting is preferable, encouraging root-action by a briar moist heat.

DR. DENNY'S AND MR. GEORGE'S NEW PALMGRASSES (Idem).—They have been sent out by different nurserymen, and we cannot advise you other than to consult our advertising columns, where they will be announced in due course.

PHAEUS GRANDIFLORUS CULTURE (W. D. A.).—After flowering the plants will start into growth, and require the soil to be kept moist, and at no time very dry, though considerably drier when at rest than when growing, when it should be freely watered. They require moderate pot-room and a compost of equal parts of fibrous loam and brown sandy peat, with a fourth part of old dry cow dung, using the soil rather rough. The old pseudobulbs are of no use for flowering, but so long as they remain fresh should not be removed. Repot after flowering. The growth of this year will, if well matured, flower the ensuing winter or spring.

LIBONIA FLORIBUNDA NOT FLOWERING (Idem).—You grow in too high and moist an atmosphere, the plant being kept constantly growing. We grow ours in a greenhouse in a light airy position, the plants being now far advanced for flowering. *Justicia speciosa* does not flower because the plants are grown in too high a temperature and have not sufficient light and air. *Gesnera zebrina* will succeed admirably in a cool stove having a slight shade and moist atmosphere during growth.

PLANTING VINES (O. W. Milne).—Plant in March, turning them out of the pots, disentangling the roots and spreading them out evenly over the border, and covering with from 4 to 6 inches of soil. Black Hamburg, Foster's White Seedling, and Venn's Black Muscat will suit you.

PRUNING OUTDOOR VINE (S. R.).—We should not cut the Vine back more than to remove any unripened growth, and should train the cane horizontally at a foot distance from the ground, and when the eyes are broken and a few inches long rub off all the shoots on the under side and front, leaving a shoot at every 18 inches distance, every second of which is to be trained upright and to the top of the wall without stopping, then take out the points of each, stopping the laterals at the first joint, and do that throughout the season. The first shoot taken to the top of the wall, from whence the Vine starts, and the next that is to be taken up the wall 8 feet distance from it, and so on. A shoot should be taken from the end of the Vine, training it upward, or nearly so, and in the autumn following it may be brought down to the horizontal position, and shoots originated from it as upon the other of a previous year's growth. In this way you will originate the rods for covering the wall, and from which you will in due course have shoots for bearing. The shoots between the principal canes should be stopped at the sixth leaf if they do not show fruit, and, if fruiting, at one joint beyond the bunch, and the laterals to one leaf.

PHAGE, NECTARINE, AND APRICOT TREES FUNGUS (A New Beginner).—The mould or parasitic fungus upon the shoots of the potted trees where the leaves were situated is a result of damp, and we do not think in anywise injurious to the trees. It will, if it be what we suspect, disappear upon a good syringing, which should not, however, be given before March, or until the buds commence swelling. We should dress the trees with a mixture of 4 ozs. of soft soap to a gallon of tobacco juice, brought to the consistency of thin paint by the addition of flowers of sulphur, applying with a brush to every part at once, taking care not to dislocate the buds. It is good against insects, and will not injure the trees if it be done carefully, the brush being

drawn upward, and not downward where the buds are situated. Do it before the buds swell.

DIONIA MUSCIPULA CULTURE (J. S. S. B.).—The plants are dead if they have antihy disappeared, but you may try them by potting in rough peaty soil and a fourth each of sphagnum and crocks broken small, draining one-third the depth of the pot and standing in a saucer stuffed round lightly with fresh moss and kept full of water, covering the plant with a bell-glass, but raised a little by a thin piece of wood, placing near the glass, but with a north aspect, or with plenty of light, but protected from bright sun. A 4-inch pot will be sufficiently large. 50° at night to 65° by day is a suitable temperature, or a warm greenhouse.

VINERY HEATING (C.).—The aspect is not a good one, but if there is not shade or objects that will obstruct the light there is no objection to it other than that you will have to make up for a deficiency of natural heat by artificial. Almost any kind of Vines would answer, but we could not advise as you do not say whether the vinery is intended for early, mid-season, or late. A 4-foot border and all inside will be practically useless after two years. There should be a width of border equal to that of the house, and half of it outside. The bottom of the border being rocky there may be no need of drainage, which can only be determined on the spot. There is no objection to the depth of the border; and as to the ingredients of which the border is to be composed, we do know good Grapes have been grown in such stuff, but it is a very poor one, and would require very high feeding in the shape of liquid manure. No one in these advanced days would think of such a border. An orchard house in "a regular shaded corner" will be certain to give a plentiful crop of disappointment, and only that; and you seem quite as unhappy in the selection of a slow-combustion boiler, though if it be a large one, and of ample heating power, there is no objection. The whole appears to us to be ill devised—not well adapted for the purposes intended, but there may be reasons which prevent its being otherwise, on which we can offer no opinion.

PLANTING STRAWBERRIES (F. M. S.).—You may safely remove the young plants which were planted in September, selecting favourable weather in February for the operation, taking up the plants with good balls of earth attached to their roots, and planting them carefully in good soil. Do not plant too deeply. They will require no special protection.

JERUSALEM ARTICOKES (Idem).—Tubers planted any time in February will produce a crop in the autumn the same as Potatoes. They are best in a single row, planting a foot apart; if in a bed the rows should be 8 feet distant from each other. Thinning of the stems is seldom necessary, but if more than one proceed from a root, draw them out when a few inches high. You will find what you need on the cultivation of Horse-radish in another column.

HEATING A CONSERVATORY (J. H.).—Providing the greenhouse boiler is sufficiently powerful to heat the 80 yards of flow and return piping necessary to connect it with the conservatory piping and the piping that will be required to heat the latter, there is no objection, but there will be a loss of heat from the 80 yards of connecting pipes which should be taken in a covered flue, and being open at the conservatory end some of the heat will be utilised for heating the conservatory. To heat the 2000 cubic feet of air you will require about 130 feet of 4-inch piping.

COCOA-NUT FIBRE REFUSE FOR HOTBEDS (J. Long).—It is not a fermenting material, and therefore it is practically useless for affording heat to a hotbed. It is valuable as a plunging material, and in its decomposed state a desirable compost for plants.

NITRATE OF SODA (A New Beginner).—The following is all the information we can render you:—Nitrates of potash (saltpetre) and of soda (sulfate potrie) have been found beneficial to Carrots, Cabbages, and lawns. One pound to a square rod of ground is a sufficient quantity. Both these nitrates have been found beneficial to Potatoes in Scotland. Mr. Murray says that from 1810 down to the present time he has been in the habit of watering Potatoes and Carnations with solutions of these two nitrates, and the benefit has been uniform and eminent in promoting their luxuriance. They have also been given in solution with great benefit to Chrysanthemums, Lettuces, Celery, Fuchsias, and Dahlias; 1 lb. to twelve gallons of water. Nitrate of soda destroys slugs.

NAMES OF FRUITS (J. Elliot).—We do not recognise the Apple. It is pleasantly flavoured, but the flesh is rather tough.

NAMES OF PLANTS (A Subscriber, Cheshire).—We cannot name plants from a leaf only, we need a flower also. (*W. F. E.*).—*Ixora coccinea*. (*W. C. E.*).—We regret that your flower had so shrivelled before reaching us as to be quite undeterminable.

POULTRY, BEE, AND PIGEON CHRONICLE.

SILKIES.

By REGINALD S. S. WOODGATE.

PART 2.

SILKIES for exhibition should be crested, 5-toed, leg-feathered, mulberry-combed, pure white in colour, light blue in ears, and legs and beak of a dark bluish slate colour. They should not be vulture-hooked: we consider this a great blemish, and would immediately destroy all birds with the slightest appearance of it. The toes should be as much as possible like the Dorking's, for the fourth and the fifth toes growing out of each other are a great blemish. The comb should be dark and mulberry-shaped; it should be smooth and fine in texture, and not rough. Our idea of a perfect comb for a Silky cock is that on the cockerel of the first-prize Alexandra Palace pair, which were claimed there for the large sum of £10, which is an extraordinary price for birds of this breed so little cultivated for exhibition purposes. The comb is slightly hollow in the centre, but this for a Silky comb is rather a point than a defect. The crests should be large, in the pullets almost hiding the combs, and they should be globular and compact, not like the crest of a cockateo. The leg-feathering should be distinct and go all down the legs to the

middle toe; but heavy feathering is not desirable or pretty—all that is wanted is a narrow margin or edging of feathering down the legs. The earlobes should be turquoise blue in colour: this is much more easily obtained in the pullets than in the cockerels. In the latter it generally comes streaked with white. We have, however, seen perfectly blue lobes in cockerels as vivid in colour as in any pullets. In the second year in both sexes, however, the colour is apt to fade and the lobes to come almost white: this is very ugly, and would prevent, or should prevent, a bird winning in strong competition. To remedy this many do not try for the blue ears at all, but breed from and for the dark raisin-coloured-faced birds, which generally keep their colour for some seasons. Silkies, however, are not of much use for exhibition after their first year, for the leg-feathering rarely comes heavy again in the second moult, especially in the hens. Of course it does sometimes, but we find it is the exception. Young birds should not be discarded for being buff or pink in breast, for very often—in fact generally—it will moult out except in very bad cases. We should never, however, breed from such birds where we could help it.

A perfect pair of Silkies for exhibition, in our opinion, should be rather small, but not too small, round in shape and very fluffy and silky, especially on the thighs and breast. They should have hardly any tails, and no hard feathers in either tails or wings. They should be low on the legs, and possess all the other desired points as named above. We hardly think the breed has justice done to it in the show pen, for it generally has to appear in the Variety class, and in that unhappy refuge the denizens are so varied and various that it must be almost a lottery which wins, the judge's whims and fancies being necessarily brought to bear. Still, all adjudicators should remember that it really is as difficult a matter to breed a perfect pen of Silkies as it is anything else. When we say perfect we know there are annually but few such pens extant; still most of those have to "come out" in the Any other variety class.

In mating them for breeding we like a cockerel and two-year hens best, but we in any way breed generally from a cockerel. We look for distinctness in toes, compact shape of body, combs and crest, before mere whiteness or leg-feathering. The latter with judicious crossing can nearly always be obtained; but the good claws and size of crest are very difficult to procure and only a few strains possess these merits. We never breed from a vry-tailed cock if we can avoid it, as this is wont to get worse and worse as years go on; in fact we know of one yard where the tails are thought nothing of, and many of the birds before their *début* in the show pen have Hamburg-like stables, but when prepared for the glories of the exhibition room they are made to undergo the Bo-peep penalty and leave their tails behind them. This often happens, too, in the case of hooks, for during the past season many of the Silkies have been as much plucked in their hooks as Brahmas or Cochins. This latter evil we lay entirely at the judges' doors, for if they will insist on such an absurd amount of leg-feather they must expect hooks. We do not for an instant wish to be thought to object to leg-feathering—very far indeed from it, but only a narrow strip or edging down the legs is needed or desirable for beauty in our opinion. A perfect Silky feather is a most beautiful thing. We have often had letters from ladies, who have seen our birds at the shows, writing to beg us to sell them the feathers by the ounce for fancy-work in swans and such like. A very admirable illustration of Silky feathers, one in the natural state and one magnified, are to be found in the chapter on Silkies in the "Illustrated Book of Poultry." The feather which is not magnified is a perfect representation of what the feathers should be in the fluff of good specimens.

To hatch for exhibition the time must depend upon the month when they are wanted for. A bird rarely gets perfect in points until it is five or six months old, and some late-hatched birds do not thoroughly get their matured plumage till the second year; still, generally, birds hatched in May and June will be quite ready for the Palace and Oxford Shows, at both of which places they have classes. Sometimes they are for some weeks, when about four months old, quite yellow on the breast and wings. This colour, however, is in no way similar to the buff or pink which we have mentioned before, but resembles feathers dipped in the yolk of an egg. This is merely the sap in the feathers, and will generally come quite right. We have seen birds almost lemon-coloured from this which have in time come snow-white, but we believe it to be more common to some strains than others. Still, no bird should be too soon discarded for this peculiarity.

Silkies are good and rough feeders. Nothing comes amiss. They eat everything greedily which a fowl can eat, but we never give maize, believing it tends to making the plumage yellow. Silkies, like all other white birds, are liable to being sunburnt; but this again we believe is more in some strains than in others. Birds for exhibition should, however, be kept in the shade, where they can have the shelter of living shrubs and underwood, and then they will rarely change colour. It is more often seen in the cocks than in the hens, though we have observed it

shows and elsewhere the latter almost golden in neck-hackles from being kept in an open and exposed place where there was no shelter from the winds or sun.

CUTTING THE COMBS OF COCKS.

At the Sittingbourne Petty Sessions Charles Sayer, landlord of a publichouse at Rainham near Sittingbourne, and John Manning, veterinary surgeon of Rochester, appeared in answer to summonses issued at the instance of the Royal Society for the Prevention of Cruelty to Animals for having unlawfully ill-treated three Bantam cocks by cutting their combs. The only question was whether the operation of cutting the combs of cocks is cruel.—Mr. James Broad, a member of the Council of the Royal College of Veterinary Surgeons, stated on oath that the practice of "dubbing," or cutting the combs of cocks, inflicted great pain upon the birds, and they were not benefited or improved by the operation. Several nerves must be severed in the operation. Indeed, he said the comb of a cock was the most vascular part of the whole body.—Mr. William Henry Jones, M.R.C.V.S., gave corroborative evidence.—Mr. Frederick Crook, one of the editors of *Land and Water*, and one of the principal judges at the Crystal Palace Poultry Shows, deposed that it was very detrimental to birds to cut their combs. He discouraged the practice as much as possible; he wrote against it, and it was he who suggested to the Baroness Burdett-Coutts to offer prizes for "undubbed" birds. He would like to make it a *sine qua non* in all poultry shows that the birds should not have their combs cut.—Mr. Harrison Weir, the well-known animal painter, was then called, and he gave it as his decided opinion that the practice of cutting the combs of cocks caused them great pain, and spoiled their appearance.

The magistrates, after consulting in private, dismissed the summons, the chairman stating that the Bench did not consider that this was an offence within the meaning of the act.—Mr. Smith applied for a case to a higher court and the magistrates granted it.

WOLVERHAMPTON SHOW OF POULTRY, &c.

HAD the Show not included a Sunday the entries would have most probably been heavier, for as it was many of the classes were but lightly filled. In *Game* the cup went to a fine old Black Red cock, good in shape and head, and grand in carriage. Mr. Mathew walked off with the lion's share of the booty, but his birds were so hard in feather and glossy from good condition, and to win in *Game* these points must be observed. In *Malays* we thought the winners well placed. Of *Brahmas* the first hen was a beauty, and exquisitely marked. The cup went to a cockerel, large in body and good in colour. The first hen and first pullet must, however, have run him close for the cup. A very lovely pullet, large and good in hackles, won the cup in *Lights*. The first Light cockerel was a well-standing bird, and large in body. We certainly thought, taking class by class, the *Lights* on this occasion surpassed their Dark relatives. *Dorkings* were good as far as they went, but did not come in the numbers they should have done. The cup went to old Coloured, a nice pen, where the hen was large and good in colour. Of *Silver-Greys* every pen noticed. In *Whites* the first hen was a very good one, square and large. Of *Cuckos* the three pens all belonged to one exhibitor. We cannot discern why this variety has not more admirers if, as we believe, they are great layers. *Cochins* were simply grand, all colours equally good. The cup went to fine old Buffs, lots of pens, however, pressing on them for cup honours, but we liked the award. Buff pullets were remarkable for good colour, and Partridges for pencilling. We liked the winning cockerels very much of this latter colour, and have watched their owner with interest advancing until he here has reached the top. *Whites* were very fine, and there was really scarcely anything to choose between the third-prize and the very highly commended pens. Perhaps the latter was as good as the second or third. *Blacks* were capital, and we hail the first-prize owner's arrival with pleasure. Mr. Darby's bird was splendid. *Houdans* were very few, and *Crèves* were also good in quality. Of *Spanish* after the winners we noticed nothing remarkable. The winning hens were good in face, and nicely shown. *Polands* were very good; most splendid *Silvers* first, grand *Gold* second, and admirable *Blacks* third, with huge crests. *Hamburgs* made a nice display. The winning *Gold-pencils* were very good, and the pullet beautifully pencilled. The first *Gold-spangled* cock was a grand bird, and in fine order. *Game Bantams* were good, and in the *Variety* class a pen of excellent *Blacks* were first. In the *Variety* class *Indian Jungs* were first, *Black Hamburgs* second, good in style and colour, and *Cuckoo Cochins* third, good *Silks*, *La Flèche*, and more *Black Hamburgs* being highly commended. The *Sale* classes were large. Some of the birds were good, but sale classes are not what they used to be for bargains; and become now more of a lottery, as a kind of *fiacre* to a show. *Aylesburs* were good, but *Bentams* still better; the winning pens of *Rouens* being

first class, good in colour and very large. In the *Variety Duck* class every pen nearly was worthy of note. The rare *Paradise Shield Drakes* of Mr. Serjeantson were first, and secured much admiration. Mr. Brown had a very lustrous and good pair of *Blacks*, which we should have liked to have found a place for in the prize list.

The *Pigeons* were very fair in quality. Mr. Yardley's *Carriers* and Mr. Pratt's *Pouters* were all good birds and well shown. We liked the first cock in *Pouters* very much. He was long in limb and good in colour. A good *Red Chequer* won in *Antwerps*—a useful-looking and well-made bird, and a nice *Dun* second. Of the *Fantails* the three winners were perfect gems. Mr. Serjeantson's first was a beauty for tail, and in spotless feather. The *Turbits* were moderate—a neat *Red* second. The *Yellow* was also a good one. In the *Variety* class were good *Blondinettes*, a *Fire Pigeon*, and some fair *Maggies*.

GAME.—*Black Red.*—Cockerels—1, S. Mathew, Stowmarket. 2, J. Palmer, Wednesbury. 3, G. Walters, Worcester. *Brown Red.*—Cockerels—1 and 2, S. Mathew. 3, Capt. J. Forsyth, Tottenham. *Excepting Brown and Black Reds.*—Cockerels—1, S. Mathew. 2, D. Hulme, Alrewas. 3, D. Harley, Edinburgh. *Any variety.*—Cock—Cup and 1, S. Mathew. 2, W. & H. Adams, Beverley. 3, D. Harley. Hen—1, S. Mathew. 2 and 3, J. Forsyth. *Malays.*—1, Miss A. Brooke, Shrewsbury. 2, G. Sunell, Rugeley. 3, J. Hinton, Warrimoor, Brammas. *Dark.*—Cock—1, Hon. Miss Douglas Pennant, Penryn Castle. 2, T. F. Ansell. 3, Rev. A. Van Straubenzee, Tottenham Vicarage. Hen—1, Newnham and Manby, Wolverhampton. 2, F. Holbrook. 3, E. Pritchard, Tottenham. *Cockerels.*—Cup, 1, and 4, Horace Lingwood, Creeping. 2, R. P. Jervais. 3, J. Lyon. *Pullets.*—1, Newnham & Manby. 2, Horace Lingwood. 3, J. Long. 4, J. Biddle, Birmingham. *Light.*—Cock—1, Horace Lingwood. 2, R. E. Horsfall. 3, Mrs. A. T. Adair, Aylsbury. Hen—1, S. Sanbrook. 2, F. Holbrook. 3, J. Bloodworth, Cheltenham. *Cockerels.*—1, P. Haines. 2, R. E. Horsfall. 3, T. A. Dean. 4, W. T. d. *Pullets.*—Cup and 1, R. E. Horsfall. 2, P. Haines. 3, Horace Lingwood. 4, W. T. d. *DORKINGS.*—Coloured, except *Silver-Grey.*—Cup and 1, J. White. 2, J. Coppell. 3, W. Badger. *Silver-Grey.*—1, W. Roe, Jun., Newark. 2, W. W. Rutledge. 3, Miss Paisey. *White.*—1, A. Darby, Shrewsbury. 2, R. Boissier. 3, W. B. Biddell. *Cuckoo.*—1, D. Hulme. 2, G. Sunell. 3, J. Bloodworth. *Cinnamon and Buff.*—Cup and 1, W. A. Burnell. 2, Mrs. A. Tindal. 3, Mrs. Allsop, Huddip Hall. *Cockerels.*—1, Mrs. A. Tindal. 2 and 3, W. A. Burnell, Southwell. *Pullets.*—1 and 2, W. A. Bindley, Edgbaston. 3, W. A. Burnell. *Brown and Partridge-feathered.*—1, Mrs. A. Tindal. 2, E. Tudman, Whitechurch. 3, J. H. Jones. *Cockerels.*—1 and 2, G. Shrimpton, Leighton-Buzzard. 3, J. H. Jones. *Pullets.*—1, Mrs. A. Tindal. 2, F. Bennett, Shimpl. 3, J. H. Jones. *Any variety.*—Cup and 1, W. A. Burnell. 2, W. A. Bindley. 3, W. A. Burnell. *Andell, Cowley Mount.* 2, G. Forsey. 3, Darby. *HOUDANS.*—Cock—1, R. B. Wood. 2, T. S. Tate. 3, S. W. Thomas. Hen—1, W. Dring. 2, P. W. Thomas. 3, F. St. John. *CRÈVES.*—1, Mrs. Cross. 2, Hon. C. Parker. *SPANISH.*—Cock—1, D. M. Mills. 2, E. Jackson. 3, W. Smallwood. Hen—1 and 2, Mrs. Allsop. 3, J. Barry. *POLANDS.*—1, G. Adkins. 2, A. & W. H. Silvester. 3, A. Darby. *HAMBURGHS.*—*Golden-spangled.*—1, T. Blaker. 2, W. S. Evans. 3, Capt. Annesley. *Silver-spangled.*—1, H. Feast. 2, J. Preston. 3, A. Shirling. *Golden-pencilled.*—1, H. Thompson. 2, H. Pickles. 3, T. & W. Fawcett. *Silver-pencilled.*—1, K. W. Bracewell. 2, F. W. McNeill. 3, H. Feast. *BANTAMS.*—*Game.*—1, R. Y. Ardagh. 2, Mrs. C. E. Hunter. 3, W. Adams. *Sebrights.*—1 and 2, M. Leno. 3, J. W. Lloyd. *Any other variety.*—1, W. H. Shackleton. 2, Sir J. Morris. 3, H. B. Smith. *VARIETY CLASS.*—1, Miss A. B. Cooke (Indian Jungle). 2, Rev. W. Serjeantson (Black Hamburgs). 3, T. A. Peden (real Cochins). *Any variety.*—1, W. A. Burnell. 2, W. A. Bindley. 3, W. A. Burnell. *COCHINS.*—1, J. C. Atwell (Buff Cochins). 2, K. P. Jervais (Partridge Cochins). 3, Capt. W. Saville (Light Brahmas). *Excepting Brahmas, Dorkings, and Cochins.*—Cock—1, E. Jackson (Crève-Cœur). 2, J. Yates (Spanish). 3, C. F. Copeman (Black Hamburgs). 4, W. C. Phillips. Hen—1, B. Hower (Spanish). 2, E. Jackson. 3, J. H. Watkins. 4, C. F. Copeman (Black Hamburgs). *Brahmas, Dorkings, or Cochins.*—Hen—1, H. Tomlinson (Cochins). 2, J. Rock (Dark Brahmas). 3, W. W. Rutledge (Silver-bred Dorkings). 4, H. Yardley (Brahmas). *Ducks.*—*Aylesbury.*—1, T. Holton. 2, W. Sparrowhawk. 3, T. Kingsley. *Rouen.*—1 and 2, W. Evans. 3, F. G. S. Rawson. *Any other variety.*—1, Rev. W. Serjeantson. 2, M. Leno. 3, A. & W. Silvester.

PIGEONS.—*Carriers.*—Cock—1 and 2, H. Yardley, Birmingham. 3, E. Collier. Hen—1 and 2, H. Yardley. 3, W. H. Johnson. *Pouters.*—Cock—1, 2, and 3, H. Pratt, Hampden-in-Arden. Hen—1 and 2, B. Pratt. 3, H. Yardley. *Tumbler.*—Cock or Hen—1, W. & H. Adams, Beverley. 2 and 3, H. Yardley. *Antwerps.*—Cock or Hen—1, 2, and 3, H. Yardley. *Dragons.*—Cock or Hen—1, W. Smith. 2 and 3, K. Woo. *Short-faced Antwerps.*—Cock or Hen—1, H. D. Gough. 2, J. J. Bradley. 3, C. Gamon. *Long-faced.*—Cock or Hen—1, O. Gamon. 2, T. H. Stretch. 3, H. Yardley. *Fantails.*—Cock or Hen—1, Rev. W. Serjeantson, Burnell Rectory. 2, E. A. Seale. 3, J. F. Loversidge. *Jacobins.*—Cock or Hen—1 and 2, E. A. Seale. 3, W. T. Bredend. *Turbits.*—Cock or Hen—1 and 2, E. A. Seale. 3, E. Sharrod. *English Cocks.*—Cock or Hen—1, H. Yardley. 2, Ward & Rhodes. *Nuns.*—Cock or Hen—1, E. A. Seale. 2, Miss A. Brooke. 3, P. Hinde. *Any other variety.*—Cock or Hen—1 and 2, H. Yardley. 3, E. A. Seale. **SELLING CLASS.**—Cock or Hen—1 and 2, H. Yardley. 3, E. Collier.

JUDGES.—*Poultry and Pigeons:* Mr. Hewitt, Sparkbrook, Birmingham; Mr. Teebay, Fulwood, Preston; Mr. J. Dixon, North Park, Bradford; Mr. H. Allsop, Birmingham.

MAIDSTONE SHOW OF POULTRY, &c.

WE regret that this Show is at present confined to the county of Kent, and we hope by another year that this Exhibition will, like its neighbour at Canterbury, be open to outsiders within at least a certain radius. *Dorkings* are generally the *pièce de résistance* at most Kentish shows, but here the quality and quantity was not up to the Kentish standard. The Coloured hen in the cup pen was a very good bird. *Silver-Greys* need no notice; and *Whites*, except the first and second pens, were only an average collection. The second pair were very clear in colour and smart, but certainly small. In *Cochins* the cup went to good *Buffs*; second also a very good pen for colour, but the pullet not quite heavily feathered enough. In the next class a good pair of *Whites* were first, the hen very good; second fair *Whites*; and third only moderate *Blacks*. *Spanish* were poor and *Brahmas* were moderate. *Lights* were better, and the prize pens were all excellent. We were glad to find *Miss Hales* winning again. The cup pullet was a beauty, and the second not far from her in quality. *Game* were especially remarkable for the Piles of Mr. Pitt-Herbert. They were sent in beautiful

bloom and condition. Black Reds had to compete with Duck-wings; they won first, however, and good they were. Of *Hamburghs* the Pencilled were the best. A neat pair of Golds won the cup, Silvers being second; while in *Spangles* Gold were first again and Silvers second. Of *Houdans* the cup pen was really a bijou, and we congratulate their owner on possessing them. Mrs. Vallance had a wonderfully good hen, and so, too, was this lady's highly commended pen. In *Creves* we liked the highly commended pen of Mr. Dring's next best to the first-prize pair. The winners were good in colour and fair in size. In the Variety class *Silgies* were first. The cockerel we believe was the same bird as won first at the Alexandra and there claimed; second moderate *Black Hamburghs*, and third good *La Flèche*. *Bantams* were capital, the Game breeds and the Variety class as well. A good pen was, we learn, disqualified for plucking, because their owner was one of those foolish ones who "cannot leave well alone." *Waterfowl* were good, *Aylesburys* being capital and *Rouens* well judged and good in colour. In the Variety class *Carolinas* were first and third, and *Pintails* second. We were pleased to see this class looking up here, for often it has been quite deserted. *Geese* and *Turkeys* were admirable. The Sale classes were moderate, and the winners call for no notice.

Pigeons.—In Carriers a Black of ordinary qualities won. In Pouters a pretty Red was first, and a middling Yellow second. Fantails were very good, and a charming pen of Whites won first. Tumblers and Trumpeters were miserable. Jacobins made a better class, but we venture to advise our Kentish Pigeon friends to get some new blood in their lofts. Homing Antwerps were fair, and in the Variety class a nice pen of Barbs, very fair in head and eyes, were first, and pretty Swallows second. The prize awards were:—

DORKINGS.—Coloured.—1, Cup, and 3, R. Cheeseman. 2, G. W. Greenhill. Silver-Gray.—1 and 2, F. Cheeseman. 3, J. Boulding. White.—1 and Cup Mrs. W. Stratford. 2, R. A. Boissier. 3, Major W. Plummer. **COCHINS.**—Buff or Cinnamon.—1, Cup, and 3, G. Dowker. 2, Mrs. A. Christy. Any other colour.—1, R. A. Boissier. 2, R. A. Boissier. 3, Miss E. Marsh. **SPANGLES.**—Black.—1 and 3, J. Francis. 2, A. Marchant. **BRAHMAS.**—Dark.—1 and Cup, Miss E. C. Shuter. 2, W. Jacob. 3, J. K. Lawther. **Light.**—1, Cup, and 2, Capt. W. Saville. 3, Miss Hales. **GAME.**—Brown Reds.—1, F. Ward. 2 and 3, J. Jeken. **Piles.**—1, Cup, 2, and 3, G. H. Fitz-Herbert. Any other variety.—1, G. H. Fitz-Herbert. 2, E. Rice. 3, Harms & Elliott. **HAMBURGHS.**—Gold or Silver-pencilled.—1, B. Norton. 2, J. K. Lawther. 3, J. B. Slater. **Gold or Silver-pencilled.**—1, Cup, and 3, G. Bowker. 2, R. Norton. Extra 3, H. White. **Houdans.**—1, Cup, and 2, W. Dring. 3, Mrs. Vallance. **CREVE-CEVRES.**—1, Miss A. Sharp. 2, H. Stephens. 3, F. Lake. Any other variety.—1, H. Stephens. 2, H. H. Stickings. 3, W. Dring. **BANTAMS.**—Game.—1 and 3, W. S. Marsh. 2, F. Ward. **Not Game.**—1, W. White. 2, L. G. Morrell. 3, W. S. Monckton.

DUCKS.—*Aylesbury*.—1 and 2, W. Jacob. 3, F. E. Arter. *Rouen*.—1, F. Cheeseman. 2, F. Ward. 3, C. Ratcliff. Any other variety.—1, F. Cheeseman. 2, G. Dowker. 3, L. G. Morrell. **GOOSE.**—1, F. Ward. 2, Mrs. T. Fowler. 3, Mrs. W. Stratford. **TURKEYS.**—1, F. Ward. 2, G. Dowker. 3, Mrs. W. Stratford. **SELLING CLASS.**—Cock.—1 and Cup, H. Stephens. 2, Capt. W. Saville. 3, W. White. *hens or Ducks.*—1, Capt. W. Saville. 2, R. Cheeseman. 3, T. Goodwin.

Pigeons.—Carriers.—1 and 3, G. H. Nutt. 2, J. Chandler. Pouters.—1, 2, and 3, G. H. Nutt. Fantails.—1, W. Dring. 2, Master G. E. Dowker. 3, Mrs. Hawley. Tumblers.—1 and 3, no awards. Jacobins.—1, P. Stoham. 2, E. Goodwin. 3, P. F. Lancaster. Homing Antwerps.—1, E. Durrant. 2, E. Goodwin. 3, W. S. Marsh. Any other variety.—1, G. H. Nutt. 2, W. Simpson. 3, E. Rose. **SELLING CLASS.**—1, J. Chandler. 2, M. Sandford. 3, P. Pine, jun.

RABBITS.—Lop-eared.—1, T. Wood, jun. 2, G. H. Nutt. *Himalayan*.—1, G. W. Greenhill. 2, H. Robinson. *Silver*.—1, G. H. Nutt. 2, G. H. Nutt. 3, G. H. Nutt. **BELOIAN HARE.**—1, H. Barham. 2, G. H. Robinson. Any other variety.—1, R. A. Boissier. 2, H. Pankhurst. **SELLING CLASS.**—1 and 2, G. H. Nutt.

JUDGE.—Mr. Teesby.

THE JACOBIN.

I HAVE been so exceedingly busy that I have not had time to notice the remarks of "WILTSHIRE RACTOR" attached to the engraving of a Jacobin of 110 years ago (No. 767, page 521), and after reading them I felt they required some notice from me, especially as I differ widely with him in what he writes. Nor does he, I think, display his usual courteous manner therein when he says, "Old men think what passed in the youth the best, in old age the past is idealised." I am an old fancier, though as yet not such a very old man. And he says further that truth as usual lies in the middle path. I never knew that such was usual, nor do I see how it applies in this case.

He says, "There have been changes in the fancy. The Turbit, for instance, was first plain-headed, then shell-crowned, and lastly, as now, point-headed." For over forty years the proper Turbit had a point head, plain heads were reckoned wrong, and it was only about twenty years ago that the shell head came into vogue, and the point fanciers then contended that they were right, and I am very greatly surprised that "WILTSHIRE RACTOR" should state that the point is new, as I am sure it will provoke more than a smile from all old Turbit fanciers. The Turbits have not varied in this respect during my remembrance, and I am and have been a Turbit fancier. So this does not bear on the Jacobin question.

As regards the English and Foreign Owls, their points are exactly the same, only one is larger than the other. As regards the English Trumpeter, it was precisely the same in every point as the Foreign, rose, turn crown, mottle, feathering of the feet, as the one now called Foreign—no points of difference. I

had Trumpeters that were quite equal to any of the imported birds, in fact rather neater. The feathers on their legs were by measurement 5½ inches, the colour dense black with good mottling. They were never beaten when shown, and their points were just the same as those shown now as Foreign; therefore this does not apply to the Jacobin controversy, for the modern so-called Jacobin does not possess any of the points of the true Jacobin. The true should have hock, chain, and tippet, this last was the part that laid over the shoulders. The things shown now in the Jacobin classes lack all the beautiful curves and grace of the true bird.

"WILTSHIRE RACTOR" also says, "If the minority wish to revive the old type let them offer prizes." This is not at all a courteous way of meeting the question. There is the true Jacobin as the points were laid down, and fanciful judges have thought proper to award prizes to birds not possessing those points, and thereby done the true breed an injury. Let them call the modern things what they like, and have classes for them, but they cannot in justice give them prizes as Jacobins. At Birmingham I have met several old fanciers, and they said that they regretted exceedingly the present style of breed, and one in particular said he was obliged to breed to that style, as certain persons judging would not look at the true Jacobin.

I do not see where the "WILTSHIRE RACTOR's" toleration is when he says "Let them offer prizes, &c." However, to the point. As I find it is the wish of very many fanciers that the bird called a Jacobin should be judged to the true points, I give notice that wherever I act as Judge I shall judge according to the true standard, and I hold that white thighs are a disqualification. Not only shall I so judge, but I am told by more than one of our best judges that it is their intention to do so likewise. I am not at liberty to mention names, but I am very happy to find that they have the spirit to try and remedy an evil arising from bad judging, and judging according to one's fancy instead of rules. I have now written all I mean to on the subject, and I have neither time nor inclination to continue the controversy further, and I quite agree with all Mr. Ure said in his last letter, "There is no comparison between the true Jacobin and the modern thing so called."—HARRISON WAIN.

LONDONDERY SHOW OF POULTRY, &c.

THIS was held on the 25th and 26th of January. The awards are as follows:—

BRAHMAS.—Dark.—Cock.—1 and 2, W. G. Mulligan, Belfast. Hen.—1 and medal, H. J. McBride, Glifford. 2, W. G. Mulligan. **Light.**—Cock.—1, T. A. Bond, Londonderry. 1, E. T. Herdman, Strabane. Hen.—1 and 2, T. A. Bond. **COCHINS.**—Cock.—1 and medal, F. Robertson, Belfast. 2, M. Mahony, Hen.—1 and 2, F. Robertson. **DORKINGS.**—Cock.—1, Rev. W. Major, Moville Rectory. 2, R. E. Herdman. Hen.—1, J. Baylow, Castleshock. 2, E. T. Herdman. **SPANGLES.**—Cock.—1 and medal, A. G. Jewell, Derry. 2, W. G. Mulligan. Hen.—1 and medal, W. G. Mulligan. 2, J. A. & M. F. Smyth, Derry. **FANCIES.**—Cock.—1, E. T. Herdman (Houdan). 2, F. Watson, Lurgan (La Flèche). Hen.—1, E. T. Herdman (Houdan). 2, F. Watson, Lurgan (La Flèche). **HAMBURGHS.**—1, E. A. Macdonald, Ballyarnet (Golden-pencilled). 2, Miss L. D. Smyth (Black). **GAME.**—1 and medal, J. Ferguson, Dalnair. 2, T. H. Graham, Bantams. 3, Miss L. Stephenson, Dublin. 4, L. Stoney, Dublin. **ANY OTHER VARIETY.**—1, J. K. Miles. 2, J. M. Millan, Coleraine. **SELLING CLASS.**—Cock.—1, D. Sullivan, Dublin (Buff Cochins). 2, E. A. Macdonald (Coloured Dorking). 3, E. T. Herdman (Light Brahma). Hen.—1, D. Sullivan (Light Brahma). 2, W. G. Mulligan. 3, T. A. Bond. **DUCKS.**—*Aylesbury*.—1, F. Robertson, Belfast. 2, W. Simpson, Bown. 3, and medal, W. G. Mulligan. 4, W. Simpson. Any other variety.—1, Rev. E. A. Brennan, Cloughton. 2, A. H. Stewart, Tuxbury. 3, W. Simpson. 4, H. Lyle, Derry. **GOOSE.**—1, M. Moore, Derry. 2, W. Simpson. 3, W. Simpson. **Pigeons.**—Carriers.—Cock or Hen.—1 and 2, W. P. Montgomery. Pouters.—1 and 2, J. H. Hutchinson. Barbs.—Cock or Hen.—1 and 2, W. A. P. Montgomery. Tumblers.—Cock or Hen.—1, W. A. P. Montgomery. 2, E. R. Lucas. Jacobins.—Cock or Hen.—1 and 2, J. Pyper. Fantails.—Cock or Hen.—1, A. Corcoran. 2, M. F. Smyth. Any other variety.—1, W. G. Henry. 2, T. A. Bond. **CAVE BRIDE.**—Buff or Pale Yellow.—Cock or Hen.—1, M. F. Smyth. 2, W. E. Magill. Dark Yellow or Juncos.—Cock or Hen.—1, C. A. Smyth. 2, E. R. Lucas. Any other colour or variety.—Cock or Hen.—1, M. F. Smyth. 2, E. R. Lucas. Young.—1, M. F. Smyth. 2, A. J. McKinlay. Mules.—1, W. E. Magill. 2, W. S. Mitchell. **British Birds.**—1, M. F. Smyth. 2, C. Watson. **Foreign Birds.**—Parrots, Parakeets, Cockatoos, &c.—1, Mrs. T. A. Bond. 2, J. W. Corbett. Any other variety.—1, Mrs. E. Rea. 2, M. F. Smyth.

JUDGES.—O. F. Staunton, Esq.

NATIONAL PEBISTERONIC SOCIETY.

THE Society's meeting was held at the Crystal Palace. Of Carriers Mr. Hedley's birds, eighteen in number, were the majority of last year, with long straight-boned beaks, well set. The skull long and flat gave the birds that unmistakable look of high breeding which even the tyro cannot but notice. Mr. Heritage made an excellent display of twenty birds full of condition, with sleek raven feathers and beautiful in the outline that sweeps from the skull to the extremity of the wings and tail—the line of beauty for the artist. Mr. Hodgson showed two good birds, but we missed the Blacks, the Duns, and the Blues of an old enthusiastic member, Mr. Ord, whom we regret to say illness detained at home. The Carriers of Mr. Keeler, especially a young Black hen, we much admired. Mr. Feltham as usual made a good display, as did Mr. Pratt. Mr. Crisp afforded us the treat of a pen of Whites; one hen was remarkably good. He will persevere, we hope, and fill up a gap in our Carrier classes. He also exhibited Duns, Blacks, and some good Blues.

Mr. Cucksey, a young member of the Society, has already made his mark. A matured Black cock was a magnificent bird. Mr. Squaw sent four birds sustaining the reputation of the Plymouth strain. This gentleman's birds are never absent from these annual grand shows, and always delight fanciers. Col. Hassard's birds were, as usual, good; we especially looked on some young Blues and Silvers, and they may not be so highly correct in all points as Blacks and Duns, but they at once arrested attention to their slender and graceful properties.

Of Pouters we counted twenty-one birds all of great merit, the property of Mr. Gill. Especially we noted a superb Yellow cock. In contrast to it stood a black hen of highest worth to a fancier, together with Blues, winners of many prizes, and Reds of the highest merit. Mr. Gill would alone have contributed an excellent show. Mr. Holloway sent four good Whites, including a cock of remarkably narrow girth, of fine shape and proportions throughout. Next are Mr. Combe's Pouters, fourteen in number, also good, yet amongst them a conspicuously fine Red cock. Capt. Norman Hill's birds show the quality that holds its own in competition and wins high positions at the greatest of all Pouter exhibitions—Edinburgh. We were at a loss which to admire most, the champion Blue or Black cock. It is a treat to look upon either.

The Homing birds or Antwerps mustered well. Mr. Gamon sent eight Long-faced show Antwerps of various colours, in form symmetrical and powerful, and eight Short-faced birds perfect in head and beak. Mr. Tegetmeier showed a pen of fourteen Blue Chequers that looked every inch flyers. Mr. Theobald who exhibited for the first time sent two pens of Antwerps, beautiful in colour, in markings, and in shape.

Mr. Pratt exhibited fifteen Carriers, some excellent birds. A most interesting pen was contributed by Mr. Hives, Red Mottled Scanderoon, characteristic in shape of head and beak, and of a deep rich red. He also sent Jacobins—White, Blue, and Self-coloured Blacks. Near them were Mr. Pratt's Barbs and a second contingent from the loft of Mr. Combe, Black and Yellow Jacobins, Yellow Baldheads, Black Turbits, and Blue Owls.

We next proceed to a circle formed by the handsome and uniform mahogany pens of the Society, arranged around the fountain in the tropical department of the Palace. First was a pen tenanted by a very excellent and rare collection of Tumblers shown by Mr. Taylor of Rochdale, including Beards, some of the best ever seen, Black Mottles, well marked, dolphin-eyed, with good carriage, head and beak. Mr. H. Johnson's eight Almond hens were all of a good rich ground colour. Mr. Jayne's contribution—eighty birds—was a sight to be remembered. Agates, Kites, Yellows, Almonds, in all degrees of brilliancy and richness of colour here greeted the eye. Mr. Merok (President) exhibited Almonds (ten) all of good colour. More especially did we notice four Almond hens, the *élite* amongst the Almonds of our day. Mr. Heritage's pen contained Agates, Almonds, and Splashes of high merit.

This show afforded the unwonted sight of a second pen of Black Mottles, the property of Mr. Henning, a comparatively young fancier who has stepped into the foremost rank. His Black Mottles were charming birds. We much doubt if any better have been viewed since those so wonderfully good of Mr. Bellamy nearly bewildered the older fanciers. We hope such a pen of birds will be an annual treat to fanciers. The same gentleman's Almonds (twelve) were exceptionally good.

Next was a pen of very good Black Beards, some of them really excellent in all points. Such specimens of this now very rare variety were shown by Mr. South (Vice-President), who also owns a pen of clean-cut, good-conditioned Baldheads. Baldheads—Blue, Black, Red, and Yellow—were a pretty group contributed by Mr. Sprunt, who showed also Yellow, Silver, and Blue Owls of excellent colour. We now arrived at the pen of Powdered Silvers shown by Mr. Esquilant. Beautiful birds, such as we should expect from the loft of so renowned a fancier. English Owls were also shown by Mr. Jones and Mr. Schweitzer, amongst them some first-rate birds. A pen of Blondinettes—a most pretty variety—was exhibited by Mr. Schweitzer. His twelve African Owls—White, Black, and Mauve-tailed—were gems. Mr. Stevenson also had a nice pen of this charming though delicate variety. Next were ten of Mr. Hedley's noted Barbs of the most highly-bred type, then the like number of Mr. Heritage's stock, and twelve of Mr. Jones's. Worthy neighbours.

We were next among the Turbits viewing a fine pen of twelve Yellows, the property of Mr. Stevenson, very good in colour; and in contrast to them Mr. Taylor showed alongside eight Black Turbits of a quality seldom seen. Next were the Blue and Silver Turbits of Mr. Stevenson. To represent the Red Turbits Mr. South filled a pen with twelve birds of very grand colour, good in markings, and of fine shape. Blue and Silver Homings, excellent birds, were shown. That popular and showy bird the Fantail was well represented, Messrs. Maynard and V. D. M. having two pens of birds with good tails and carriage. A gathering of many kinds of Toy Pigeons as usual came from the loft of Mr.

Vander Meersch—viz., Trumpeters, Pigmy Pouters, Swallows, Spots, Magpies, together with a pen of twelve White Jacobins—an unusual sight.

We at length arrived at the Dragoons. Not so numerous as in some former years, yet a collection noticeable from the names of rising fanciers coming into notice by a display of promising birds. Mr. Sargent showed only for a second time. He has not been idle during the past year, and had some good Reds and Yellows. Mr. Thomas also could boast of his pen, for in it were specimens of exceedingly good birds. The older Dragoon fanciers were not absent. Of Silvers and Blues there were eighteen of Mr. Whitehead's (Secretary) birds that hold their ground well in competition. Mr. Batty also showed Yellows and Reds; Mr. Thomas, Blues. A pair of pretty Cumulets were penned by Capt. Hill. Pigmy Pouters by Mr. Hives. Magpies very good by Mr. Herbert.

It remains but to comment on the show of Jacobins, at present so fashionable a variety and in which the Society showed great strength. Mr. Hardy's contribution of Yellows, Reds, Turbits, and Mottles was excellent; good in style, closeness of frill and mane. Of Mr. Boyd's twenty-four magnificent specimens we cannot write as they deserve. They should have been gazed upon by the Jacobin fancier if he travelled far to do so. In his pens were grouped the most noted birds in England, and a stud we venture to say not approached in quality by any of the more modern fanciers, for Mr. Boyd's love of Jacobins date from years ago. The prize Yellow cocks were there; that gem of neatness the noted little Red hen, type of perfection; Red cock with exuberance of frill feathers, among which are interspersed long silken threads of the softest texture. Half-a-dozen Red Jacobins were sent by Mr. Easton; very pretty, neat, close-hooded birds. Mr. Easton's Jacobins are well known by visitors to the grand shows, and on this occasion they well sustained his high repute. Of Jacobins, a stud of ten Yellows in Mr. Bull's pen, we observed many an old Pigeon-lover examining with approving glances. They were large-frilled, round-headed, down-beaked. They well merited all the attention they attracted. Our description of this formidable array of Pigeons closes with the notice of a pen of fourteen Red Jacobins, the property of Mr. Batty, who now appears to have divided his care between his old strain of Yellow Dragoons and this variety. We wish him as much success in the latter as he has achieved in the former.

AMERICAN HONEY BOXES.

"WHAT! are you, too, going across the Atlantic to find evidence in support of your system of bee-keeping?" No, if bee-keeping in Great Britain cannot stand on its own legs, I shall never attempt to hold it up by American props. If we have much to learn I am sure we shall not learn it from our cousins on the other side of the water. There they have their own warmer climate, and will manage bees as best they can. From reading American books I have come to the conclusion that the practical bee-keepers of this country will never fill their honey pots by copying the American practice.

We have heard a great deal about the small boxes or supers of honeycomb which are so easily sold in American cities. These boxes are said to hold from 2 lbs. to 4 lbs. of honeycomb. A gentleman in this locality brought one of these American boxes for me to look at lately. It had come from America with honey in it, but was empty when it came here. It is very simply and cheaply made. The top, ends, and bottom are of wood, not quite half an inch thick, and the sides are of thin glass. It measures 6 inches long, 5 inches deep, and 2 inches wide—just wide enough for one comb. On the top of the box was a large black paper label with the following inscription in golden letters:—

CHOICE
WHITE CLOVER HONEY,
from the Apiaries of
J. H. MARSH, Sharon, Vt.
Honey put up in any style desired.
Wholesale and retail.

Well, here is evidence of Americans going ahead. Here is a box filled by American bees, sold in Boston, shipped to England, and emptied at Manchester. I was pleased to see the box, and as it was smeared with honey which had run from the combs, I scraped the glass and wood with a view to taste American honey. I gathered about two tea-spoonfuls of it, which did not appear or taste like English clover honey. If it was not sugar syrup I never saw or tasted anything so like it. I could not obtain a smack of honey from it. And the combs that adhered to the wood and glass were very much whiter than the combs made in this country from clover honey.

I shall try the small-box system this year, not with a view to profit, but to find out how many can be obtained from one stock hive in a season. If the season be a favourable one for honey-gathering, the experiment will, I think, be both interesting and instructive; and the readers of this Journal will have a full account of it at the end of the season. Whatever number be filled they will contain nothing but pure honey gathered by the bees from field flowers.—A. PATTISON.

THE WONDERS OF A BEE HIVE.—No. 4.

ACCORDING to Walker's Dictionary "a drone is an idler or sluggard; a bee which makes no honey." Drone bees are twenty-four days in their cells, and are born amid an active community without receiving any attention. Their introduction to the world is without pageant, and during their lives they merit and receive but little patronage. They are clumsy unmannerly creatures, and quite incapable of culture or improvement. Their great characteristic is laziness—dronishness in early life and dronishness to the end. They have no inclination for a life of activity and usefulness, and seem to take no interest in the welfare of the community of which they form a part.

Knowing as I do the gloomy future they have before them, their early doom and suffering, sorrowful end, I can never view drone life without being touched with a degree of sympathy and sorrow. They are very unfortunate creatures, being without any weapons or means of self-defence, and seem somewhat conscious of their inferiority and worthlessness. In watching them going in and out of their hives, even in the heyday of their lives, we naturally compare them to galley-slaves, spiritless and hopeless. The climax of drone-life is wonderful and without parallel in the insect or animal world. Drone bees are bred and born by thousands in a natural way, but when and where do we find one dying a natural death?

Drones being males are produced in hives when their bees have to make all necessary preparations for swarming. The swarms take the old queens with them, but before they emigrate the bees prepare royal cells and place eggs in them, which speedily become perfect princesses ready to take the places and thrones of their mothers. The advent of swarming is generally preceded by the production of drones. Connected with the question of the production of drones and their matrimonial alliances we find many wonders and mysteries, but owing to their nature we shall do well not to mention them in this series of letters.

After, some ten days after, the bees discover that their young queens are laying in a satisfactory manner, they commence to worry the drones, which are harassed and persecuted more bitterly every day. Then the bees resort to the cruel process of hungering the drones by driving them from the combs down to the boards, where they can find no food. Here they may be found for days pining and languishing from sheer want. Literally they are being starved to death. Many of them may be seen on the flight boards with savage tormentors on their backs trying to escape, but where can they go to find a home? They are incapable of work, and are the most stupid, shiftless, helpless creatures possible. Friendless and homeless they can find no rest or sympathy anywhere. Truly the termination of drone-life is a chapter of horrors—rather painful to write, and painful to read.

There may be another production of drones later in the season. Hives may become full of brood in July and August, and when this happens another hatch of drones will appear. First and second swarms too may become full in July or August, and prepare for swarming by setting a great number of drone eggs in drone cells. Thus a second massacre of drones becomes necessary, and generally takes place in September. In hives that have lost their queens, or possess worthless queens, the bees do not kill their drones.

In most hives far too many drones are reared. In all such too much drone comb has been built. It is a stroke of good policy and management to have hives with very little drone comb in them. When we come to write on practical matters we may have something to say on this subject. Within the last five years drone traps have been invented and introduced. They are clever inventions, and answer pretty well. They are placed on the mouths of hives, so that all the working bees in going to the fields pass through the traps. The drones go into the traps in leaving the hives, but being larger than workers they cannot pass through. They are caught thus and easily destroyed.

Perhaps the best way of ridding a hive of its drones is to drive all the bees and drones into an empty hive, catch the queen, and put her with a few bees back amongst the combs of the hive, and place it on the old stand; then put the queenless swarm on board, raise the hive high enough to let the workers come out. In less than an hour the bees will have left their drones in a state of confinement to the mercy to the bee-master, and it will be an act of mercy to destroy them speedily.—A. PATTISON.

OUR LETTER BOX.

DORKING AND GAME CROSS (Scotch Grey).—You will have difficulty in finding a harder fowl than the Dorking crossed with Game. They will be good egg-producers if you keep early-hatched pullets that will attain to maturity in the winter. Pure Game are harder than the cross between them and Dorkings. The disadvantage is their pugnacity. We should prefer the Houdans. You will find good mention of the Game in all the poultry books. We know no book especially devoted to that breed. It is well to remark the Houdans do not sit, nor do the Spanish.

GRAY AND SILVER-GRAY DORKINGS (J. C.).—There is no defined colour for the Grey Dorking. The Silver-Gray cock must have an entirely black breast and tail, very light hackle and saddle—not one white spot on the breast, and no colour on the wing but metallic black with silver bar. The hen should have a black-and-white striped hackle, a robin breast, light grey feathers all over the body, each having a white shaft; no white spots on the plumage. They are difficult to breed correctly, as, being birds of feather, a trifling fault becomes a fatal one.

CRACKS IN CEMENT (E. S. W.).—There is no mode of filling the cracks than by inserting some of the same kind of cement.

METEOROLOGICAL OBSERVATIONS.

GARDEN SQUARE, LONDON.

Lat. 51° 38' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.						Rain.
	Barom. at Sea and Level.	Hygrome- ter.		Direction of Wind.	Temp. of Air at 1 ft.	Shade Tem- perature.		Radiation Temperature.		In. sun.	On grass	
		Dry.	Wet.			Max.	Min.	In. sun.	On grass			
1876. Jan. and Feb.	Jacobs.	deg.	deg.	E.	deg.	deg.	deg.	deg.	deg.	In.		
	30.364	84.5	84.5	E.	58.0	47.8	19.7	61.1	56.9	—	—	
	30.355	83.3	83.8	E.	58.8	48.5	22.5	59.0	51.7	—	—	
	30.312	83.8	83.8	N.W.	59.0	48.8	24.3	51.5	50.3	—	—	
	30.315	83.0	84.0	E.	58.5	48.5	21.0	52.4	51.0	—	—	
	30.241	81.9	81.8	S.W.	58.4	47.9	23.4	53.0	55.4	0.008	—	
	30.486	85.0	85.3	S.S.W.	58.8	54.8	41.0	58.3	57.8	—	—	
	30.179	84.5	81.5	S.S.W.	59.8	48.4	43.0	58.6	57.6	0.110	—	
Means	30.331	84.1	83.5		58.4	48.4	24.5	61.1	51.5	0.102	—	

REMARKS.

26th.—Foggy morning, but clearing off by noon, and fine the remainder of the day.

27th.—Very thick fog all day; a few gleams of sun about 1 P.M., but the fog very dense about 8 P.M.; clearer towards night.

28th.—Very foggy, but the sun managed to get through it occasionally in the middle of the day.

29th.—Dense fog in morning, but the sun shone brightly in the middle of the day in spite of the still remaining fog, which got more dense and damp towards night.

30th.—Fog in morning, rain at noon, and very damp all the rest of the day.

31st.—A clear, bright, pleasant day throughout.

Feb. 1st.—Rather thick all day, but not near so much so as during the past week; rain at night.

High barometer, scarcely any wind, much fog, and little rain.—G. J. SYMONS.

COVENT GARDEN MARKET.—FEBRUARY 2.

THERE is very little alteration to report from last week. Late Grapes are still in good supply and fair demand. A fine sample of Ash-leaved Kidney Potatoes from Jersey has been in the market. All kinds of green stuff are now coming in fair quantities, and can be bought at reasonable prices.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1 sieve	0 10 2 0	Malberries.....	lb.	0 6 to 8 6
Apricots.....	dozen	0 0 0 0	Nectarines.....	dozen	0 0 0 0
Cherries.....	lb.	0 0 0 0	Oranges.....	per 100	6 6 12 0
Cherries.....	bushel 12	20 0 0	Peaches.....	dozen	0 0 0 0
Currants.....	1 sieve	0 0 0 0	Pears, kitchen....	dozen	0 0 0 0
Black.....	do.	0 0 0 0	do.....	dozen	2 0 4 8
Figs.....	dozen	0 0 0 0	Pine Apples.....	lb.	2 0 0 0
Filberts.....	lb.	0 5 0 0	Plums.....	1 sieve	0 0 0 0
Gooseberries.....	lb.	0 5 0 0	Quinces.....	bushel	2 0 0 0
Grapes, household....	lb.	0 0 0 0	Raspberries.....	lb.	0 0 0 0
Lemons.....	per 100	4 0 12 0	Strawberries.....	lb.	0 0 0 0
Melons.....	each	1 0 2 6	Walnuts.....	bushel	4 0 10 0
			ditto.....	per 100	1 6 2 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	dozen	0 10 0 0	Leeks.....	bunch	0 4 to 6 0
Asparagus.....	per 100	0 12 0 0	Mushrooms.....	potile	1 0 2 0
French.....	bunch 12	0 0 0 0	Mustard & Cress	punnet	0 2 0 0
Beans, kidney.....	1 sieve	0 0 0 0	Onions.....	bushel	2 0 0 0
Beet, Red.....	dozen	1 6 0 0	pickling.....	quart	0 0 0 0
Broccoli.....	bunch 12	0 1 6 0	Parley.....	doz. bushel	2 0 4 0
Brussels sprouts	1 sieve	2 0 0 0	Parsnips.....	dozen	0 0 0 0
Cabbage.....	dozen	1 0 0 0	Peas.....	quart	0 0 0 0
Carrots.....	bunch 0	4 0 8 0	Potatoes.....	bushel	2 6 0 0
Capicums.....	per 100	1 6 2 0	Kidney.....	do.	3 0 0 0
Cauliflowers.....	dozen	2 0 0 0	New.....	lb	1 0 2 0
Celery.....	bunch 12	0 2 0 0	Radishes.....	doz. bunches	0 1 0 0
Coleworts.....	doz. bunches	3 0 4 0	Rhubarb.....	bunch	0 0 0 0
Cucumbers.....	each	1 0 2 0	Salsify.....	bunch	0 0 1 0
Endive.....	dozen	1 0 0 0	Scorzonera.....	bunch	1 0 0 0
Fennel.....	bunch 0	8 0 0 0	Seakale.....	basket	1 2 0 0
Garlic.....	lb.	0 6 0 0	Shallots.....	lb.	0 8 0 0
Herbs.....	bunch 0	8 0 0 0	Spinach.....	bushel	4 0 0 0
Horseradish.....	bunch 4	0 0 0 0	Tomatoes.....	dozen	2 0 0 0
Lettuce.....	dozen	0 6 1 0	Turnips.....	bunch	0 4 0 0
French Cabbage....	1 0	1 0 1 0	Vegetable Marrows....	0 0	6 0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	FEBRUARY 10-16, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.			
10	TH	Royal Horticultural Society—Adjourn'd Annual Meet.	44.9	30.1	37.5	7	38	5	2	8	12	8	1	15	14	40
11	F	Royal Institution at 8 P.M.	44.5	29.8	37.2	7	35	5	4	7	36	8	15	16	14	41
12	S	Royal Botanic Society at 8.45 P.M.	44.9	29.6	37.3	7	33	5	6	8	56	8	27	17	14	42
13	SUN	SEPTUAGESIMA.	44.8	29.6	36.9	7	31	5	8	10	14	8	38	18	14	43
14	M	Royal Geographical Society at 8.30 P.M.	45.6	30.9	39.8	7	19	5	10	11	31	8	49	19	14	44
15	TU	Zoological Society at 8.30 P.M.	47.0	31.8	39.2	7	17	5	13	morn.	9	1	20	14	25	45
16	W	Royal Horticultural Society—Fruit and Floral Committee at 11 A.M.	47.0	30.6	38.8	7	15	5	13	0	43	9	17	21	14	26

From observations taken near London during forty-three years, the average day temperature of the week is 46.9°; and its night temperature 30.0°.

ROSE CULTURE AND EXHIBITING.

"Queen of the flowers which made Eden gay."



WHEN I began Rose-growing I thought the grand desideratum was the greatest possible number of varieties of Roses. I can remember well how I bought every Rose to be found in such catalogues as William Paul's, and how I thought that Mr. Keynes' selection was far too small to give one a chance of success at the shows. I soon, indeed the very first season, found out my mistake, I had spent scores of pounds on summer Roses including all the cripples that some are so fond of. I remember going through my grand list with Mr. Keynes, and how he laughed as name after name of varieties utterly worthless were read out. What was the consequence? Why, my garden, all virgin soil that I had haunted there at tremendous expense, was full of Baron Prévost, Empereur de Maroc, Achille Godefroy, Madame Chirard, Austrian Briars, Juno, Chénédoie, Blanchefleur, &c., and when I came to cut for the shows, of all the good sorts I had only about two or three specimens. I had, consequently, to throw or give away hundreds the next autumn.

By long experience I found out which are the very best, and now I confine myself to about fifty, or at the most sixty, sorts, of which I grow a fair number—I mean by a fair number from ten to twenty. This number would give an amateur a collection of about a thousand, which is as many as most men can do with. Now, when the time for staging arrives there is no difficulty in cutting a stand of good sorts.

As to what those sorts are no one need be a moment in doubt, for they have but to send to your office for the number of "our Journal" which contains the Rose election return and they will there find a list of as many Roses as they want to buy placed in order of merit. I am, of course, writing these notes principally as an exhibitor and for exhibitors, though I hope the advice may be serviceable to all Rose-growers.

Next, as to the place in your garden (the position) where you ought to grow your best specimens. I feel confident that the more open the position is the better the Roses will do. Of course the Roses must face the south or south-east, but what I mean is, the idea of protecting Roses by walls or other screens is a false one; at least, I have proved it here to be so.

I have just made a grand new bed to contain about a thousand Roses. I have been lifting Roses from all other parts of this absurdly large place to plant them in the new bed. Well, every Rose that has been grown against a wall is almost worthless. One side of the wood is green and the other side is hard, barkbound, unripened wood, fit for nothing but our very mediæval fireplaces.

The wood of the Teas does not ripen here, at least when they are planted against walls.

I expect this statement to be violently contradicted, and I only hope it will cause discussion, because every

article that has to do with Roses is so welcome to the readers of our Journal. My friend Mr. Baker can endorse what I have said as to my own Teas, and I believe Mr. Headley, Mr. Jowett, and other large Tea Rose-growers will support me too.

Of course climate makes all the difference; I am speaking of the west of England, where we have not ever very hard or long frosts. I know that my brother in Yorkshire cannot bloom a Tea unless it is either against a wall, or in his Tea-Rose house. I mean a genial climate to be taken for granted in all I write on Roses; for I should write in a perfectly different style if I dated this letter from Yorkshire instead of from the lovely Monkton Wyld.

My idea of a gem of a position for a rosery is such as I am now forming. A portion of an old meadow has (by my friend Mr. Baker's advice) been railed-off just below the kitchen garden. There is a very low wall at the back, above which are espalier Apple trees, and about 20 yards further away to the north is the Peach wall which shuts in the garden. To the east of the rosery there is a plantation of Fir trees, and to the west another of high Hollies, Laurels, &c. To the south there is not a tree or a single obstacle to stop the free current of air. Planted in simple straight rows are about forty-eight sorts, and from ten to twenty of a sort according to the excellency of the variety. So that when staging for a show the boxes can be placed under the Fir trees, and the Roses cut and staged in a very short time. This is Mr. Baker's plan, and he is the most successful amateur grower in the world.

It is important to have your Roses together when the exhibition season has arrived. I can remember so well how I used to have to run with two blooms in each hand and one between my teeth at least 800 yards before I could stage them. For we cannot well adopt the nurseryman's practice of sending two boys with a box which the foreman fills and then sends back to the staging shed; we should require no end of men or "lady helps" to do this.

Any advice as to staging must be of use, as when the day arrives how fast time flies, and what hard work it is to have your blooms out and staged before the sun becomes hot! As to staging, then, I would say this—Have your boxes ready the night before and placed in a row. Say you are showing in all the classes at a great show, place your forty-eight first, then thirty-six next, then twenty-four, and so on. Then commence to cut the variety you mean to begin your boxes with. I always start mine with that grandest of Roses Charles Lefebvre; Mr. Baker is very fond of Madame Charles Wood. Cut as many good suitable blooms as you can find and take them to your boxes, and place one at the beginning of each stand, then go back and bring the next, and so on. The blooms then never leave your or your man's hands till they are placed in the tubes. If you cannot rely on your knowledge of the different sorts you must have some one to find the labels and place them in front of the Roses as you bring them in. When all is done close every box, and have them taken down into your wine-cellar. Then open the lids wide, lock the cellar, and leave them in solitude

undisturbed by anyone (however dear *she* may be) till you place them in your carriage for conveyance to the train. But before you remove the boxes from the cellar you will have to run round your nursery and cut every likely young Rose for your spare box. It is of the greatest importance that these should be very young, for you never know what sort of a night you may have, and a journey always opens blooms quicker than anything else. There are also many blooms which open more quickly than others, and have to be cut very young indeed.

I think I have shown my hand sufficiently for one letter. If, however, my dear old friends the head Rose nurserymen would only add to their descriptions of the Roses in the catalogues such words as "A good traveller;" "must be cut very young;" "loses colour on the road," &c., they would confer a boon on hundreds of exhibitors. But this is one of the things that nothing but experience—experience gained, too, by repeated sad failures—will teach, and we must all gain it in the same way. There is no Rose here on earth without a thorn, and the Rose exhibitor cannot attain to that envied position of first-prize holder at the Crystal Palace without hard work, frequent disappointments, many heartburnings, and incessant loving care. But who will grudge all this in the cause of the Rose? What worshipper at the shrine of Flora's choicest gift will hesitate to offer that which costs him most of all—his incessant labour, his constant love? and if even once she answers his prayer and rewards his constancy by placing him first at her fête in the Palace of crystal he will be more than amply repaid for all his toil and care and love; and as he pledges her in the wine that bears her name and drains a bumper of Château La Rose in honour of his victory, there will be but one thought dominant in his heart, and that will be the hope that each year will make the Rose more honoured and loved. *Vivat Rosa regina florum.*—JOHN B. M. CAMM, *Monkton Wyld.*

LILY CULTURE AND LIST OF SPECIES AND VARIETIES.

SINCE the advent of *Lilium auratum* in 1860 there has been quite a rage for Lilies, and many new species and distinct varieties have been introduced subsequently from Japan, California, the Philippine Islands, &c. All of them may be cultivated in pots, and nearly the whole of them in the open ground in England. When the bulbs are planted out of doors they should be in a position where the plants will not be exposed to the fury of south-west gales. Not only the flowers but the leaves also are much injured by wind.

The culture in pots is very simple, and may be briefly described. When the flower-stalks become yellow it is a sign that they may be cut down near the surface of the ground, and as soon as convenient after this the roots may be repotted. There is some difference of opinion amongst Lily growers as to the best way this is to be done. Some hold that it is injurious to the bulbs to shake them out of the soil and separate them, and would repot year after year, increasing annually the size of the pots. If the roots are potted before they start into growth I believe it is the best practice to shake out all the old soil, and saving as many as possible of the fibrous roots at the base of the bulb. There will also be a larger proportion of fibrous roots at the base of the old stalks, and these will have grown all round the bulb. The best way is to twist this stalk with all the roots out from the bulb.

I have tried to grow them in various composts and they do well in loam, leaf mould, and decayed manure. They do equally well in a compost of turfy loam and turfy peat in equal proportions, the leaf mould to be omitted, but adding the same proportion of manure and sand; one-fifth part of the compost ought to be well-decayed manure. I have always found that the roots are in better health when peat has been used in the compost. Good peat cannot be obtained in all districts, but when it can I advise its use; but it is as well to state that very fine Lilies can be grown without peat in the soil.

I believe in carefully draining all pots intended to grow plants during a whole season. The crocks should be placed in carefully, one large piece over the hole, a few similar bits of crock should be placed over it, and some smaller drainage over all; the finer portion of the compost must be prevented from mixing with this by placing fibrous turf over the crocks. In potting press the mould in firmly by the hand, but not hard. The pots used may be of various sizes, one bulb in the centre of a 5 or 6-inch pot, or a dozen or a score of roots may be

potted in a 18 or 15-inch. I have also potted three or four roots in a 9-inch pot; the top of the bulb should be an inch or more below the surface. After potting plunge the pots out of doors in some light material—I find cocoa-nut fibre refuse very useful for this purpose; the surface of the pots should be at least 6 inches covered. Early in February they must be taken out of the plunging material and be put into a cold frame. By this time plenty of new roots will have formed, and some of the early sorts be throwing up the flower-stems. Abundant ventilation is necessary, and in fine weather the lights may be removed. When all danger of frost is over the plants may be removed to a sheltered position out of doors, or they may be kept through the season under glass; if the latter, the plants should be close to the glass, the house to be well ventilated, and the ventilators open night as well as day. I have had *L. auratum* and *L. Humboldtii* run up to 8 or 10 feet under such circumstances, and be well furnished with leaves from the base. The flower-stems require to be supported by sticks, and when in flower they must be shaded from the sun.

As to sorts, *L. auratum* must stand at the top of the list. Amongst the importations from Japan are many inferior varieties, but the best selections are truly noble flowers. *L. Krameri* and *L. Krameri album* are very much like *auratum* in style of growth and formation of flower; the petals of the former are suffused with pink. *L. Leichtlinii* is a very beautiful flower of slender growth; the petals gracefully recurve. They are clear yellow, spotted with brownish purple. There is also a major form which is scarce.

L. speciosum, of which there are at least six distinct and very beautiful varieties, is, perhaps, the most useful of all for pot culture. *L. Humboldtii* is a very showy species, the flowers are orange yellow densely spotted with brown; the petals are recurved, and the whole flower resembles *L. tigrinum splendens*. *L. californicum* and *L. pardalinum* are nearly allied species. *L. longiflorum* with its elegant trumpet-shaped, clear white flowers, should be in the most select collection. *L. Washingtonianum* is a handsome species, but it is not such a fine flower in cultivation as it was expected to be from the glowing accounts received with it. *L. umbellatum* and its varieties *L. Thunbergianum* and numerous forms thereof are all worthy of culture. *L. giganteum* is a grand species and likes a shady sheltered position in which to develop its magnificent spike of flowers. *L. tigrinum splendens* is the best of the Tiger Lilies. *L. tigrinum fl.-pl.* is also a very fine variety. *L. tenuifolium* is a gem, the stem is a foot high furnished with narrow leaves, and the flowers are orange scarlet, the petals elegantly recurved. *L. parvum* is also a small dwarf species worthy of culture.—J. DOUGLAS.

THE ARRANGEMENTS OF COLOURS

IN THE BEDS OF THE LONDON PARKS AND GARDENS.—No. 5.

COLOUR gives to the world beauty and ornament; it aids us in determining distance and space, and enables the eye more readily to separate objects. All colours are contained, in light, in a state of combination, and are found to resolve themselves into three primary colours—viz., red, yellow, and blue, and three compound or intermediate colours, each formed by the union of two primitive colours. These compound colours are purple, green, or orange. Mixtures of these secondary colours produce the tertiary colours, which are softer and less definite. Black and white may for all practical purposes, whether in painting, floriculture, or landscape gardening, be considered as colours. Painters describe colours as being warm colours or cold colours, orange and red and those hues and tints being warm, blue and green being cold colours. Yellow is of all colours the most allied to light, while its complementary purple is the darkest of hues; they contrast, therefore, as to light and dark—that is, in reference to light alone. Red is the most exciting and positive of all colours, its complementary green the most soothing and grateful to the eye. Red and green are non-contrasting as to light and dark, but they are contrasting as to their powers of exciting the eye and as to the power of colouring.

Blue is the coldest and most retiring of all colours, its complementary orange the warmest and most advancing. The contrast is, therefore, both as to advancing and retiring, and as to hot and cold. Thus it will be seen that the orange is complementary to blue, and blue to orange; purple is complementary to yellow, and yellow to purple; green is a com-

plementary to red, and red to green. To discover the complementary of any given colour, say red for example, you have only to fix the eyes earnestly on a spot of black and then on a spot of red, when a dim circle of green, the complementary colour to red, will be seen around the red spot. In the like manner the complementary colour of purple will be found to be orange, and of blue yellow.

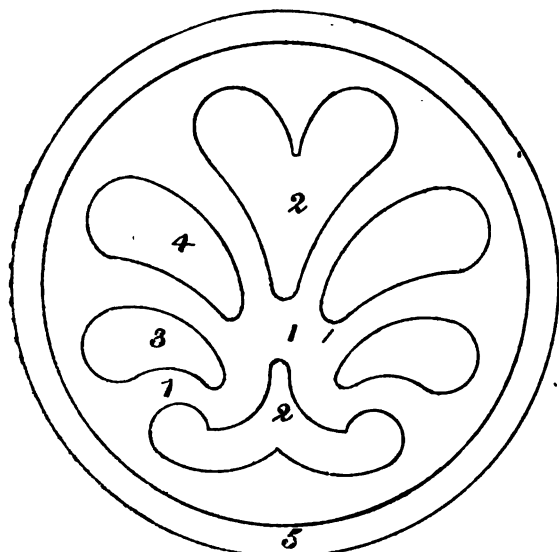


Fig. 26.—Bed E.

The simplest arrangements of colours are the combinations of the primaries and secondaries, yet that these combinations be perfectly harmonious requires great skill in their distribution, otherwise their characteristics of simplicity speedily degenerate into coarse vulgarity. Nothing is less brilliant than flower beds in which the only colours to be seen are blue and white. Nothing is more gaudy than a garden stocked with a profusion of yellow and little else. It is very unsatisfactory also to find flowers but of different shades placed near each other, and all these errors of taste should be avoided.

In order that a garden may be showy and attractive the grand principle in the employment of colours is never to employ a compound colour between the two primitive colours which compose it. For example, purple ought never to be employed between blue and red, green between blue and yellow, or orange between yellow and red. Blue flowers should be placed near orange, violet next to yellow. Reds and pinks look well when surrounded with a border of white or grey. Each primitive colour should be contrasted with its complementary one, which will always be found to be a compound one. Thus red is a primitive colour, but green is a compound one; yellow is a primitive colour, but purple a compound; and blue primitive, orange compound.

In the case of employing primitive colours in a combination without the compound or intermediate colour one should be planted in large, and the other in small quantities. One primitive colour may be opposite to another, and will have a good effect. For example, adjoining a mass of blue there may be specks of red or yellow, but the primitive colours have a better effect still when the specks of blue, red, and yellow are

dotted in a mass of compound colours, and thus nothing is finer in effect than a mass of green with two or three specks of red or bright yellow. The same principle will hold good with white or black, and thus a speck or two of bright, light, or clear-shining black may be placed adjoining or among objects of any colour whatever. When I speak of black it applies to foliage, not flowers; indeed, there are no black flowers that I

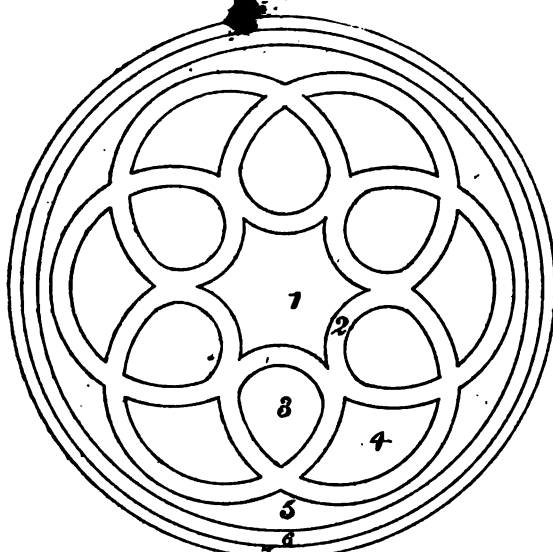


Fig. 27.—Bed F.

am aware of. The following examples of planting circular beds effectively are submitted.

BED E.

1. *Lobelia Blue King*.
2. *Alternanthera amoena spectabilis*.
3. *Alternanthera paronychioides major*.

4. *White Lobelia*.

5. *Stellaria graminea aurea*.

This bed would look best on a sloping bank.

BED F.

1. *Coleus Verschaffeltii*.

2. *Leucophyton Brownii*.

3. *Lobelia Blue Stone*.

4. *Alternanthera magnifica*.

A deep claret colour.

5. *Stellaria graminea aurea*.

6. *Echeveria secunda glauca*.

7. *Sempervivum montanum*.

BED G.

1. *Iresine Lindenii* and *Gazania splendens*, planted alternately.

2. *White Lobelia*.

3. *Blue Lobelia*.

4. *Golden Pyrethrum*.

5. *Echeveria secunda glauca*.

—N. COLE, Kensington.

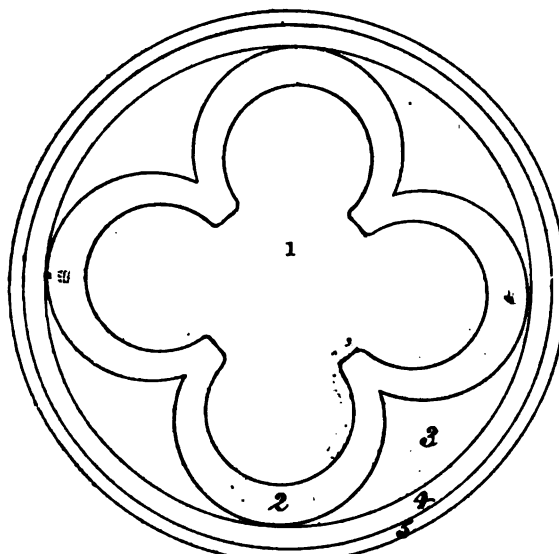


Fig. 28.—Bed G.

KEEPING GRAPES LATE.

I quite agree with your correspondent "W. E." that good late Grapes can be had even with the disadvantages of growing plants in the vineries. I had charge of a late vinery in my former situation, Chilworth Manor Gardens, in which were greenhouse plants, &c., and we, like "W. E.," took advantage of a dry clear day to water the plants, then mopped the water up dry, having opened both front and top ventilators to thoroughly dry the house. We were never troubled with mildew, the Grapes keeping good till the middle of February, when those remaining were cut from the Vines, the stems of the

bunches being inserted in bottles with a little water and a piece of charcoal in each bottle to keep the water sweet, and suspended in a dry room till the Grapes were required for table.

The varieties were Lady Downe's, West's St. Peter's, Muscat of Alexandria, White Nice, and Black Alicante; the last two being the best, carrying the heaviest bunches, Black Alicante weighing on an average nearly 3 lbs. when cut from the Vines.

I see reference has been made to Gros Colman Grape. My experience of it will not speak much in its favour. We had it in a cool vinery where there was but little or no fire heat, by the side of Black Alicante, Muscat of Alexandria, and Mrs. Pince, all of which set and ripened without the aid of any fire heat whatever. The bunches were everything that could be desired, but not so with Gros Colman; this Grape was badly coloured and very deficient in flavour. It was discarded altogether from our collection. Mr. Batters, gardener, Chilworth Manor, informed me some weeks ago that he paid a visit to Heckfield last season and saw it there in splendid condition, Mr. Wildsmith thinking very highly of it.—F. H. FAOUR.

AURICULAS.

IF "ALFRED" be an enthusiastic man, the letter in page 87 will have chilled him. In order, therefore, to give him a few grains of solace, and to show that he can live very comfortably without having either Page's Champion or Taylor's Glory, let me extract from Glenny's "Annals of Horticulture" for 1847 what is said in disparagement of these two varieties, though in other respects they are duly praised. Page's Champion "is of uncertain texture, apt to crack in the paste, and occasionally very much crumpled. The paste rather thin. The divisions of the petals often go quite through the colour. The pips generally want fatness. By growing a number of them we may pick one fit to exhibit." Of Taylor's Glory another writer, in page 415, says, "Paste not circular, ground colour breaks through the edge. In my opinion it is much overrated."

When these opinions were given the plants were to be had. I bought a Champion at Dickson's in Acre Lane for a few shillings, I think 5s. Now they are nearly lost and cannot be bought the desire of possessing them has increased, and fancy throws over them a halo which conceals defects that were visible enough when they were cheap and common.—G. S.

ROYAL HORTICULTURAL SOCIETY.

The Annual General Meeting of this Society was held on Tuesday at the Council-rooms, South Kensington; but owing to the fact that Parliament was opened on the same day the Council very properly had it announced in all the papers that the annual meeting for the dispatch of business would not be held until Thursday the 10th inst. However, at a thinly attended meeting yesterday the Hon. and Rev. J. T. Boscawen took the chair in the absence of the President, Lord Aberdare. At the Council board there were present Mr. Webb, the Treasurer; Dr. Hogg, the Secretary; Mr. Little, Dr. Denny, Mr. Warner, Mr. Kellock, Mr. Haughton, &c.

The CHAIRMAN.—Ladies and Gentlemen, I suppose you will take the report as read.

SEVERAL MEMBERS.—Certainly.

The CHAIRMAN.—Well, then, ladies and gentlemen, I would ask you, under the circumstances, to have this meeting adjourned until Thursday next, because it would be very unfair to arrive at any conclusion with respect to the affairs of the Society without having a full meeting of its Fellows. It would be utterly impossible for us to come to a conclusion upon the very serious question before us on this occasion [hear, hear]. I think the proper thing to do is to adjourn the meeting [hear, hear].

Sir PETER POLZ said he, for one, in the interest of the Society, wished to see the meeting adjourned to a day when all the Fellows of the Society could, without hesitation, express their opinions.

The question of adjournment was then put to the meeting, and on a vote being taken it was resolved to proceed to business. The ballot was then taken, and the following was the result:—President, Rt. Hon. Lord Aberdare; Treasurer, Henry Webb; Secretary, Dr. Hogg; Expenses Committeemen, F. Campion, Henry Webb, and Vice-Admiral W. W. Hornby; Auditors, Conrad H. Pinches, James F. West, and John Lee. Mr. H. J. Veitch then moved that this meeting be adjourned till Thursday the 10th inst., and this was carried unanimously.

REPORT OF THE COUNCIL TO THE ANNUAL GENERAL MEETING.

THE most important work which the Society has been able to accomplish for the advancement of the science and practice of

horticulture during the past year will be found in the Report of the Chiswick Board of Directors. The Council congratulate the Fellows on the useful work which has been done in the garden at Chiswick in the way of determining many new varieties of fruits and vegetables, and in testing the merits of a large variety of the new flowers which are employed for the adornment of gardens. They especially call their attention to the important discovery that has been made by Mr. Worthington G. Smith, a member of the Scientific Committee, who has detected the resting spores of *Peronospora infestans*, or Potato blight, the particulars of which were first given to the world at the meetings of this Society. By this valuable discovery light has been thrown upon the life and economy of this national scourge which, it is hoped, will enable physiologists to suggest a means to check and ultimately destroy this disease which has for so many years interfered with the production of this important article of food.

The three Committees entrusted with the scientific and practical operations of the Society have regularly met during the year, and the reports of their proceedings have been published in the current horticultural periodicals. The low state of the Society's finances led some time ago to the discontinuance of the Journal, and, as a medium of communication between the Fellows as to the result of the Society's operations, recourse has been had to existing publications. The Council regret that they have not been able to recommence the publication of the Journal; and, should there be such an improvement in the revenue as to warrant them in doing so, they will lose no time in re-issuing it.

In the early part of the year it was found impossible to adhere to the schedule of prizes offered at the flower shows at South Kensington, and the Council then in office announced the necessity of reducing the prizes by 50 per cent. This proceeding dissatisfied many of the exhibitors, who thereupon refused to send plants, and the exhibitions suffered greatly in extent and beauty. This falling-off was apparent at all the early shows, which in consequence did not attract as many visitors or yield as much money at the gates as was expected.

On the reconstruction of the Council in June last the exhibitors who had held aloof from previous shows determined to make a gratuitous display in order to prove they were not influenced alone by the offer of prizes, and there was held on the 21st July, under the large tent, one of the most magnificent shows of the kind ever seen in the gardens at South Kensington. To those gentlemen who came forward so liberally to support the Society at a time when it was surrounded with many difficulties the best thanks of the Fellows are due.

The Council would remind the Fellows that to keep up the horticultural attractions of the gardens, as well as to promote and encourage the science and practice of horticulture, it is necessary to maintain these horticultural exhibitions; and to do this, as well as to provide for the general working expenses of the Society and the interest on the debt, it is necessary that the revenue be increased much beyond what it has ever yet reached. The income of the Society has never, without extraneous assistance, been sufficient to meet the expenditure. For two years, when the International Industrial Exhibitions were held in the adjoining buildings, and certain concessions were made to the Society by Her Majesty's Commissioners, the revenue was sufficient for all requirements, but in no other year has it ever been so. It was, therefore, with the object of raising the revenue that the Council most unwillingly felt it their duty to revise the existing privileges of Fellows, and to reconstruct them on such terms as they considered would attain the desired result.

It will be seen on reference to the balance-sheet that the debts bequeathed by former Councils still remain at upwards of £4,000, and although the revenue of the year has been lessened by £800, it has been at the cost of the prize list.

The agreement with Her Majesty's Commissioners has not been completed, but the terms, as previously announced, have been arranged, and the Council rely upon the co-operation of the Fellows for an increase of income to enable them to carry out the objects of the Society, and to maintain in efficiency and attractiveness the gardens both of Chiswick and South Kensington.

REPORT OF THE CHISWICK BOARD OF DIRECTION.

The Board of Direction at Chiswick report that a great deal of good and important work has been carried on during the past season.

That the crops of fruit have been plentiful, but owing to the great want of sunlight and extreme moisture, not only has the flavour been very inferior, but many varieties have decayed prematurely, an observation which seems to apply very generally throughout the country.

The matter of the greatest interest which came before the Board, as regards the fruit and vegetable department, after the adjudication with respect to the trials of Onions, Celeries, and the more perfect definition of the several varieties of Cabbages, of which the Society possesses a very complete collection, is the discovery, which has so long been a desideratum,

of the resting spores of the *Peronospora*, to which the formidable *Potato murrain* is due.

Some peculiar features soon manifested themselves in a large collection of American varieties of Potato, which are under experiment. It was not, indeed, the first time that these features had been observed, for they were well known to Mr. Barron, who had remarked that they were far more pronounced with respect to English-grown sorts than with those which were immediately imported from America. Indeed, these latter seemed free from disease. During the early part of this year the disease was so prominent, not only in the garden, but generally over the country, as to call more general attention to the subject. It was, indeed, intimated that the matter was exaggerated, or, indeed, was altogether denied; but the slightest inspection showed that there was enough for serious injury. Some peculiar bodies had been observed in the blackened leaves, which were supposed to belong to some species of *Protomyces*; but Mr. Worthington Smith at once conceived that they might be the long-sought resting spores, and carried out the matter so perseveringly that he arrived at complete certainty on the question. It remains only to be observed how these resting spores may comport themselves when germinating in the spring, and we trust that Mr. Smith will add to the honours which he has so well merited, that of ascertaining this closing point in the life history of this destructive pest.

POMOLOGICAL DEPARTMENT.

The crop of fruit of all kinds has been unusually abundant in the garden this year, and many varieties which have not hitherto fruited have been observed, and descriptions of them have been made. An opportunity has also been afforded for correcting erroneous nomenclature, and of ascertaining synonyms.

The varieties of Currants have for many years been very much misunderstood, great confusion having existed as to their nomenclature and identification. A collection of as many kinds as it was possible to obtain, both at home and abroad, was secured, and the number of reputed kinds planted in the garden amounted to fifty. When these were examined, and compared one with the other, it was found that there were only sixteen distinct, twelve of them being red, one flesh-coloured, and three white.

One of the largest experimental trials of Onions which has ever been undertaken was carried out very successfully. 158 samples were sown under 98 different names. These were all carefully compared and referred to their proper sections, whereby that large collection of reputed varieties was reduced to twenty. A full report of this trial has been already published, and as this was confined to the spring-sown sorts, the remainder, consisting of the Tripoli and Silver-skinned sections, are now under trial as autumn-sown Onions, and will form the substance of a future report.

A trial of all the varieties of Celery was also very successful, and out of forty-seven sorts that were sown, twenty proved to be distinct. A full report of this trial has also been published.

An attempt was made to obtain a full report on the numerous varieties of the Kidney Bean, but the season being cold and ungenial this proved a failure, and another trial will be made this year.

An attempt was also made to investigate those varieties of Potatoes that had not been included in the former trials, but the virulent attack of the Potato disease to which they were subjected rendered the experiment a failure.

A complete collection of all known varieties of Cauliflower has been sown for trial during the present season.

The distribution to the Fellows consisted of 965 packets of cuttings of fruit trees, comprising Apples, Pears, Plums, Cherries, Vines, and Figs, and of 17,062 packets of vegetable seeds.

The important discovery of the resting spores of the *Peronospora infestans* in the tuber of the Potato will no doubt be referred to by the Botanical Director. It was found that the disease this year attacked chiefly the new American varieties, grown from home-grown seed of the second year after their introduction, and it has been further remarked that all those new American Potatoes which produce such enormous crops from newly-imported seed rapidly degenerate year by year after their introduction, and that the produce gradually becomes smaller and of inferior quality.

The extensive collection of Strawberries which was planted for the purposes of trial promises to fruit well this season.

FLORAL DEPARTMENT.

The work of the past year in the Floral Department has been in some degree crippled by the diminished facilities granted to the Superintendent. Nevertheless, under the circumstances, some very good work has been accomplished.

The trials of plants and flowers constitute some of the most important work done in this department—work which is of much public utility, since the experienced judgment of the Floral Committee, to whose labours for many years the Society owes so much, is brought in this way to bear upon subjects which are

all grown under identical conditions. The conclusions arrived at by the Committee form, consequently, a tolerably safe guide in the selection of subjects adapted for the climate of London, and for districts in which the climatal and geological conditions are in any degree similar. During the spring months the Committee examined the collection of bedding Violas which Mr. Barron had got together, consisting of some eighty-two varieties, and amongst them seventeen certificates of merit were distributed. Later on, a collection of Fuchsias, grown alike in comparatively small pots, and consisting of 135 varieties, underwent the scrutiny of the same body, and on this occasion twenty certificates were awarded. These were cultivated under glass. In the open-air beds a large contribution of Zonal Pelargoniums, from the principal nurserymen and florists, and consisting of 850 varieties, was planted out, and amongst them seventeen certificates were distributed. Besides these subjects, considerable collections of Phloxes and of Pentstemons were planted for inspection and comparison.

The plants prepared at Chiswick for the decoration of the garden at South Kensington always draw heavily on the labour and other resources of that establishment. During the past year there have been provided in this way, and devoted to this object, 12,000 flowering plants for the ornamentation of the conservatory, and 52,000 for bedding-out in the garden.

The conservatory plants, calculated at the low price of 1s. each, give a return of £597 16s.; and the bedding plants, valued at from 1d. to 4d. each, a return of £457 17s., making a total of £1055 18s., the whole expenditure on maintaining the garden during the past year being only about £1500.

The following are the subjects which have been distributed amongst the Fellows from this department—namely, plants of various kinds, 2000; cuttings of various kinds, 523; packets of seeds, various, 81,632.

The Directors have again to express their regret that the slender means at their disposal does not permit them to engage in those experiments in scientific floriculture and horticulture, and in those illustrations of modern practice, for the proper and efficient carrying forward of which, as being the national exemplar, the public has a strong claim upon the best efforts of the Society.

M. J. BERKELEY.
R. HOGG.
T. MOORE.

REVENUE ACCOUNT FROM 1ST JANUARY TO 31ST DECEMBER, 1875.

		Dr.		£ s. d.		£ s. d.	
To Establishment Expenses:—							
Salaries		559	19	5			
Wages		383	16	10			
Printing, Stationery, and Cards		261	18	3			
Postages		107	18	2			
Law		105	17	6			
Miscellaneous		70	11	8			
Gas		20	19	5			
Library		8	8	8			
						1,487	19 6
Special Expenses in relation to Horticulture:—							
Journal		48	7	6			
Fruit Committee		24	6	0			
Floral Committee		32	9	10			
Botanical Adviser		200	0	0			
Bedding Room		14	12	8			
Botanical Professor		62	10	0			
						332	7 6
Chiswick Garden Expenses:—							
Rent, Rates, Taxes, and Insurance		267	9	2			
Labour		394	6	4			
Implement, Manure, Coals, and Coke		296	11	11			
Repairs		77	15	7			
Trees, Plants, Seeds, &c.		41	10	1			
Miscellaneous		78	5	4			
Superintendent's Salary		160	0	0			
Water		82	16	1			
						1,798	14 6
Kensington Garden Expenses:—							
Rates, Taxes, and Insurance		587	14	4			
Superintendent's Salary		100	0	0			
Labour		631	12	11			
Repairs		118	12	1			
Coke and Manure		97	9	0			
Implement		38	9	6			
Water		60	9	0			
Miscellaneous		78	8	8			
Bands		259	0	0			
						1,981	10 6
Exhibitions:—							
Advertising		146	12	2			
Prizes and Medals		448	15	9			
Bands		71	13	0			
Police		1	12	0			
Sundries		15	4	5			
Superintendent of Flower Shows		25	0	0			
Judges' Fees		28	2	0			
Special Prizes		4	2	0			
						786	0 4
Interest on Debentures						1,988	10 11
Balance						860	10 2
						£9,305	12 11

	£	s.	d.
Balance from Revenue Account	4,018	16	6
Amount not debited in 1874 chargeable to that Account	129	18	7
	<u>£4,148</u>	<u>10</u>	<u>1</u>
Balance down	<u>£28,210</u>	<u>16</u>	<u>11</u>
	£	s.	d.
By 1-15 Life Compositions as at 1st January			
Admission Fees (Fellows)	786	16	0
Annual Subscriptions	198	2	0
Ditto ditto (New)	6,408	8	0
Ditto ditto (outstanding Dec., 1875)	198	9	0
	<u>207</u>	<u>18</u>	<u>0</u>
	6,814	10	0
Exhibitions	222	0	8
In Hands of Ticket Agents	2	17	6
Promenades	185	8	0
Daily Admissions	<u>829</u>	<u>0</u>	<u>11</u>
	464	8	11
Rent of Stalls in Entrance	50	0	0
Garden Produce	806	4	5
Davis' Bequest (Interest)	60	8	4
Advertisements in Prize Schedules	37	14	0
Packing Charges	7	19	0
Miscellaneous Receipts	886	2	1
	<u>£9,906</u>	<u>12</u>	<u>11</u>
Balance down	850	10	2
Amounts not credited to Revenue Account in 1874	82	8	0
Balance	<u>8,210</u>	<u>16</u>	<u>11</u>
	<u>£4,148</u>	<u>10</u>	<u>1</u>

NOTES AND GLEANINGS.

FIFTY FELLOWS have been elected by the Royal Horticultural Society between April and December of last year.

— Owing to the disastrous effects of the *PHYLLLOXERA* in the French vineyards, the desirability of importing stocks from America was urged on the ground that the vigorous character of the American varieties were by that insect invulnerable. This appears, however, to be simply "tall talk," for a correspondent in the *Prairie Farmer* reports that he has recently taken up 2000 Vines in nearly twenty varieties, and that every sort was infested; the strong growers, however, being the most free from the pest, but all were attacked. The "little villains were found on the roots by millions."

— ACCORDING to Professor Bottger, a moderately concentrated solution of caustic soda or potash seems to promote the GERMINATION OF SEEDS even more than ammonia. Seeds after soaking but a few hours in diluted potash solution put forth radicles.

— At the Tiverton Horticultural Show to be held on May 24th and 25th, the following SILVER CUPS are announced, in addition to a liberal schedule of prizes. For eighteen stove and greenhouse plants a silver cup value £20; for twelve Azaleas a cup value £15; for twelve Roses in pots a cup value £10; and for nine Pelargoniums a cup value £8.

— LAPAGERIA ROSEA, writes a gardener, is harder than many people imagine, and states that at Gunnersbury Park a portion of the plant has protruded from the inside to the outside of the house, where it has grown and flowered for two years without any protection whatever. The frost of the recent winter destroyed the flowers, but has done no apparent injury to the shoots that had produced them.

— We have to thank the Hon. and Rev. J. T. Boscawen of Lamorran, Cornwall, for specimens of the CORNISH GILLIFLOWER APPLE, which exceed in size and excel in flavour any we have ever seen before. They are within a very little of being 4 inches long, and they are peculiarly snouted and ridged at the apex. The flesh is the deepest yellow we have ever seen in this variety, and may be described as yellow as an omelette.

— THE double-flowered Pelargoniums and Cinerarias are to be followed by DOUBLE-FLOWERED BEGONIAS, some varieties of the tuberous-rooted section being announced by M. Lemoine of Nancy. It is only the male flowers of each fascicle that are double, the female flowers retaining their normal form. Of these varieties B. Gloire de Nancy is in colour rich vermillion, and B. Lemoinei orange scarlet. They are to be distributed during the ensuing season.

— BRITISH Consuls in Brazil notice the extraordinary floral wealth of that vast empire. Their reports in 1875 call attention to the abundance of the trees from the juice of

which INDIA-RUBBER is prepared. At Aracaty this has recently become the most valuable article brought into the produce market of that place. From Bahia Consul Morgan sends a translation from a book published by the Inspector of the Custom-house of that port, in which it is stated that the consumption of a century would not exhaust the supply of india-rubber. The Inspector gives an account of a very remarkable tree, the CARNAUBA PALM, which grows in Brazil without any culture, and it is so hardy as to flourish in the most prolonged drought, and has often served at such times as the means of support to the population of more than one province. The top when young is an appreciable and nutritious article of food; and from this tree also wine, vinegar, and a saccharine matter are extracted, as well as a kind of gum, similar in its taste and properties to sago. From the wood musical instruments are made, as also tubes and pumps for water. The delicate fibrous substances of the pith of the stalk and its leaves make a good substitute for cork. The roots have the same virtues as the sarsaparilla. The pulp of the fruit is of an agreeable taste, and the nut oily and emulsive, is roasted and then used as coffee by many persons. From the trunk are obtained strong fibres, and also a species of flour similar to maizena, and a liquid resembling that of the Bahia Coconut. From the dried straw are made mats, hats, baskets, and brooms, and large quantities of the straw are exported to Europe for the manufacture of fine hats. Finally, from the leaves is produced the wax used in the manufacture of candles; and the export of this wax exceeds £162,000 a-year in value. The Inspector suggests that perhaps in no other country can there be found a plant applied to so many and varied purposes.

— FROM the report of the New Jersey CRANBERRY ASSOCIATION it appears that there are 15,000 acres of land in America devoted to Cranberry production, the average value of the crop being \$4,375,000. Last year the crop is estimated at 210,000 bushels. The crops in 1872 and 1873 were 275,000 bushels.

— THE Committee appointed to award the POTATO PRIZES offered by Messrs. B. K. Bliss & Sons in America have issued an elaborate report. The competitors, as might be expected, have "whipped" the "Britishers" who have been engaged in a similar enterprise in the "old country." The returns of the American prizewinners in raising the greatest weights from 1 lb. of seed credit Mr. Wood with producing 1417 lbs. of Snowflake, and Mr. Perkins with raising 1666½ lbs. of Eureka; the whole of the twelve prizetakers returned weights of over 1000 lbs. with both varieties. Further experiments have been made as to the most profitable distances at which to plant Potatoes, the results varying from 378 bushels per acre, the sets being 2 by 3 feet; to 441 bushels, the sets being 3 by 3½ feet apart.

— THE growth of MELONS IN SPAIN is so much in advance of the immediate consumption, although poor and rich alike almost live upon them during two months of the year, that the gardener cuts thousands just before they arrive at maturity and hangs them up for the winter. Half or three-quarters of an acre produce no less in a favourable season than 400 arrobas of Melons. Now at a rough calculation these 400 arrobas weighing 10,000 lbs. may be estimated at the value of ½d. per lb., which is equivalent to about £32. This calculation will give a slight idea of the importance of the Melon trade. To form an idea of the wealth of Spanish irrigated ground we must remember that four crops annually are raised upon the same plot; and that growing amid Melon or Apricot grounds stand the Peach, the Fig, the Pomegranate, or the Almond tree.

— BROWNEA GRANDIFLORA has, says the *Irish Farmers' Gazette*, been for some time in flower in the large stove at Glasnevin, and the noble tree, for such it is, of B. grandiceps in the same house is just now showing for flower, and a magnificent display may be confidently looked for by-and-by. In the same department a lofty and well-furnished tree of the Mango is flowering freely, we trust to be followed by a good set and a heavy crop of this delicious tropical fruit.

MISTLETOE.

I HAVE seen the Mistletoe growing on the Apple, Pear, Plum, Cherry, Medlar, Quince, and Filbert, also on the common Oak, Ash, Elder, Maple, Black and White Thorn, Poplar, Elm, Horse Chestnut, Lime, and Laburnum.

On the Lime trees, in the park of Compton House near

Stockbridge, Hants, it may be seen in abundance. Huge bushes they are, or rather were. I have cut some myself 3 feet in diameter. Two rows of large old Lime trees each side of the carriage drive in front of the mansion were indeed grand to behold during the winter months, being literally covered from top to bottom with huge bushes bearing such an abundance of their white berries that they were plainly visible from the windows.

Adjacent to the Limes was a Laburnum tree; this stood in a shrubbery in the pleasure grounds, and on this the Mistletoe might be seen growing. Also in the orchard adjoining, on the fruit trees before mentioned, good-sized bushes might be seen, but nowhere was it so luxuriant as on the Limes. All the trees in my list were growing on the same estate.

I can vouch for the above facts, having lived in the gardens with my late father, who was at that time gardener there.

I have never seen the Mistletoe growing in such abundance anywhere that I have lived since, with the exception of on a very old Willow tree adjoining the park of Lockerby Hall in the same county. This tree is very much decayed and broken, more from extreme age than from the parasitic growth upon it.—F. H. FROUD.

GRAFTING OLD PEAR TREES.

We have five large Pear trees in our garden, called about here "the Pine Pear." The fruit is not fit to eat, and only makes very rough perry. They are just in their prime, and bear heavy crops of fruit; but being of so little use I would sooner cut them down than leave them as they are. The fruit ripens in October and November. Would it not be worth while to try grafting? The stems are perfectly sound, and the trees show no signs of decay. Pears and Plums do very well here (Gloucester), better I think than Apples, and everything off our ground has a very good flavour. Our soil is a stiff clayey marl. What sorts would be best to graft on the trees?—G. NEWMAN.

[By all means graft your trees, and you will have abundant crops of excellent fruit in much less time than if you were to replace them with young trees. Do not confine the grafts to one or two main branches close to the stem, but secure as many lateral limbs as you can, even if you have to retain lengths of 6 feet or more for that purpose. The importance of this operation will be fully explained in the next paper on "Pears and their Culture." To have early and successive fruit take Citron des Carmes, ripening in August; Williams's Bon Chrétien, September; Comte de Lamy, October; Doyenné du Comice, November; and Knight's Monarch from December to March.—Eds.]

MISTLETOE CULTURE AT ANTWERP.

MR. VAN GEERT has obliged us by a letter from which the following is extracted:—

"The way I proceeded to form my miniature 'Mistletoe trees,' as they are rightly called, which were referred to on page 49, was simply this: I selected some well-developed berries at the end of April, and after having bruised them between the finger and thumb clefted them on the stems of some young healthy Thorns (*Crataegus oxyacantha*), placing each berry under a small twig. A month afterwards the radicle made its appearance; first straight, as if to look out where to fix, then bending itself in order to reach the bark of the Thorn. As soon as the bark was touched the point of the radicle became flat and attached to the bark of the Thorn in the same way as a leech on the skin of a patient. In this position and without any other move the seed remained till the following spring, when it lifted itself from its first position; the radicle remained cleft to the bark by its apex, became straight again, when two cotyledons formed and two small green leaves were produced. In this position the plant remained again till the following spring, when it made two little twigs each of two leaves; and as every leaf produces, the following year, a little twig of two leaves, the development of the leaves follows a geometrical progression, as—2, 4, 8, 16, 32, &c.

"As is seen by this, the development of the Mistletoe goes on very slowly at first, and that it requires at least six years before the plant makes some appearance, and this is the principal reason why I did not continue its cultivation. Another inconvenience is that in very dry weather the seeds after having germinated do not always keep alive, or after having produced their radicles and having kept well the first year,

do not the following spring produce their cotyledons, and die off."

MELOCACTUS.

THE family of Indian Figs is an extensive one, and includes some of the most curious examples of the vegetable kingdom. The genus is divided into sections—*Cactus* (Melon Thistle), *Echinocactus* (Hedgehog Thistle), *Epiphyllum* (Leaf-flowering), *Mammillaria* (Nipple-bearers), and *Melocactus* (Turk's-cap Cactus). The flowers of the first and third section are, if not long-lasting, yet singularly beautiful. Species of the other sections are cultivated for their striking forms.

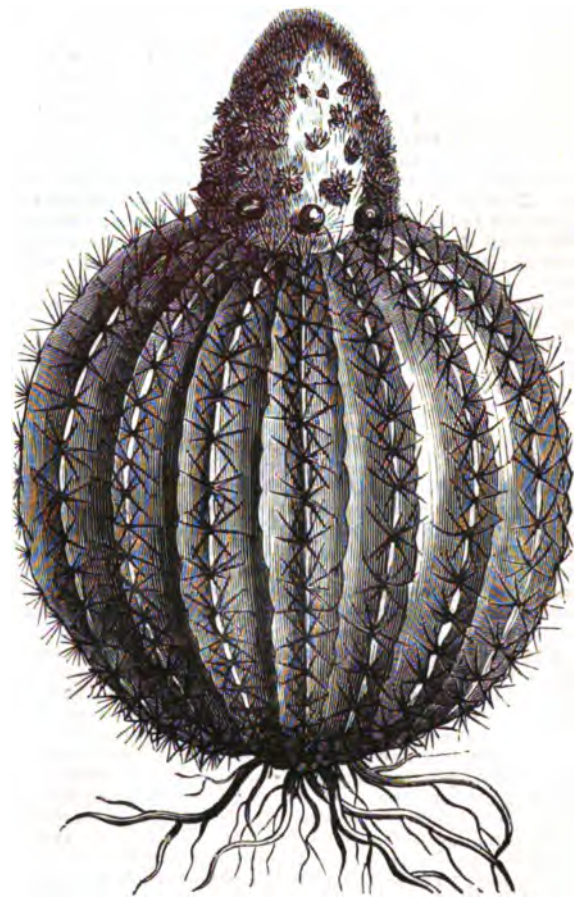


Fig. 19.—Melocactus.

These plants are now rising in popularity, and those who possess good specimens do not part with them so readily as they did a few years ago. *Melocactus* may be known as having the flowers produced on a head or "cap" surmounting the plant; those on *Echinocactus* issuing from the ribs or angles; the species of *Mammillaria* being composed of an assemblage of small tubercles, and between them the flowers appear.

Their cultivation is simple. The plants requiring it should be potted in April or May in a rough compost of loam, old dried cow dung, and limy rubbish. They should then be afforded a high temperature and moist atmosphere, watering them sparingly until established, when water may be more freely applied. In the autumn they require to be gradually dried-off and be kept in a winter temperature of 45°. They require full light at all times, and are readily increased by offsets and protuberances.

COLOUR OF GARDEN WALLS.

"H. W. W." asks about the best colouring for garden walls. They are usually left of the native colour of the material of which the walls are built, and there is no better material than bricks. If there is any advantage to be derived from colour

black would be the best, as this colour would absorb and radiate more heat than any other. When Mr. Crockett was gardener at The Raith in Fifeshire, N.B., he had his Peach and Apricot walls coloured black. There did not seem to be much gained in earliness, but as the whole wall was coloured and not a portion for experiment, one could not tell whether there was any difference practically. As far as I can remember the trees were not in the best condition; for my own part I have never thought of colouring walls similar to those at The Raith, as they had not a very lively appearance. —J. DOUGLAS.

“We think Mr. Douglas is right, for dark-coloured walls become colder than light-coloured at night unless screens are then put before them. We extract the following from “The Science and Practice of Gardening :”—

“Colour has a very considerable influence over a body's power of absorbing heat. If a thermometer on a hot summer's day be exposed to the sun, it will indicate a temperature of about 100°; but if the bulb be blackened with Indian ink or the smoke of a candle, it will rise from 10° to 20° higher. The reason for this is that the polished surface of the glass reflects some of the sun's rays, but the blackened surface absorbs them all. Blue absorbs all but the blue rays; red all but the red; green and yellow all but those of their own name; and white reflects all the rays. The lightest-coloured rays are the most heating; therefore light-coloured walls, but especially white, are the worst for fruit trees. The thermometer against a wall rendered black by coal tar rises 5° higher in the sunshine than the same instrument suspended against a red-brick structure of the same thickness; nor will it cool lower at night though its radiating power is increased by the increased darkness of its colour if a proper screen be then employed.”]

NOTES FROM MY GARDEN IN 1875.

FRUIT.

I AM not a fruitist, and yet I like to think that I have fruit in my garden, and am curious in noting some of the climatic effects on the little I have from year to year, to mark the failures and chronicle the successes; and as my garden may resemble many others it may not be uninteresting to some of our readers if I make these notes public. I aspire to no superiority in culture, no great extent of knowledge, and to nothing exceptional in what I cultivate, yet I may interest some.

I have mentioned that I had a small miniature fruit garden which I owed to the kindness of Mr. Rivers. In the autumn of 1874 I moved a row of bush Plums to give the Pears and Apples more room, and placed them at the bottom of my garden where the soil is stiffer than in that part where they were. They had never borne anything worth mentioning in their former position, but last season I had a capital crop, especially on some trees. Of Plums Pershore was very full, and pronounced by all as one of the very best kinds for preserving, quite equalling Green Gage and better in colour. Oullin's Gage was also very good. I had a few Jefferson's of good quality also. The success which has attended this removal has induced me to do the same with the small Apples and Pears, which I have this autumn transferred to other quarters. But Cherries I must away with. They have borne a few, but the blackbirds always get them, and I do not see the use of filling up my garden for their benefit, while to cover them up would cost more than they are worth in this county of Cherries. I have already mentioned what a disappointment this crop was last season. There is but one large Bigarreau tree in this garden, and it is not by any means in a good position, but bears tolerably well. Last year it was fully laden, but the dreadful wet, day after day, so completely spoiled the fruit and washed out all their flavour that they were really not worth gathering.

There is one matter on the subject of Pears I cannot understand. I have already mentioned that I was obliged to cut down a tree of Knight's Monarch because the fruit never would ripen. I have against the only piece of wall there was here until lately a tree of Beurré Diel. It bears well, and the fruit is large and handsome, but I have them now (January 29th) still unripened. They have turned quite yellow, and anyone looking at them would say that they are ripe; but they are hard and neither “beurré” or “demi-beurré,” and they have at last been handed over to the cook for stewing. I asked “our doctor” about them, and he advised their being put into a warm place. This was done, but still they would not ripen. My neighbour has a tree of the same sort, and it ripens its

fruit well. Am I to attribute this to some defect of the soil? Have any of our readers found that the soil affects this variety in this manner, and that, like Knight's Monarch, it requires something stiffer? I have (being highly convinced of its excellence) added Doyenné de Comice to the few already here, one on the wall and two as pyramids. The growth seems to be robust, and no one who has tasted it when well grown can fail to be satisfied by its flavour. There was a wonderful crop of Bon Chrétien and Beurré de Capiaumont on my two large trees. Comte de Lamy was not as full as last year, but for an October Pear I know nothing to beat it. It has for the eight years that I have been here usually borne well, sometimes enormously, and its flavour is of the very best.

In Apples I have at last succeeded in procuring a couple of trees of a very old favourite sort of mine—the Irish Peach, not as well known as it ought to be. For an August fruit there is not one that I know of to equal it when gathered from the tree. There is another Apple of Irish origin better known which follows it—the Kerry Pippin, a briar and delicious fruit. Amongst the large trees here is one of a variety which I believe to be the Forge or Gough Apple; for although I have frequently taken samples of it to be named I can attain no certainty about it. It is a very abundant bearer and an excellent cooking Apple, and has the peculiarity of fruiting every second year; and thus, although this was all around us a very good Apple year, I had not a single fruit on it. Last year was not a good year, but still it produced a few bushels. Cox's Orange Pippin is, take it all in all, about the best Apple for early winter that we have, and I have grafted it on a couple of trees that did not produce well. Some fruit that Mr. Dancer of Chiswick was good enough to send me were splendid in appearance and flavour.

Strawberries were not a great success. I had (for the last time, I am sorry to say) a nice crop in the house, but out of doors they were neither so fine or plentiful as usual. The only variety of any novelty that I have tried was La Grosse Sucrée; it seems to be a useful early kind, free-bearing, and of good flavour. It does not seem, however, that we are improving much in this delicious fruit; and it would, perhaps, be hardly possible to conceive any great improvement on some of the old-established kinds, unless we could obtain sorts that would prolong the season. The earlier sorts are quite as early as we hope to find suitable for our uncertain climate, but it would be a great boon if we could have some that would come in even later than Frogmore Late Pine, Elton, or Eleanor.

But if Strawberries were not a success Raspberries were. From my few short rows I gathered more than 150 lbs. of fruit of fine quality. And here let me say that I thoroughly believe in the plan I have adopted. They are planted in a cool place in rows; a stout galvanised wire is stretched along and the canes tied to it. The soil is never dug, only forked over and manured well, and the canes are something remarkable.

My Fig trees did not produce anything like the quantity of fruit which they did in 1874, nor was the fruit of such good quality; but this I attribute, not to any failure in the trees, but to the unpropitious character of the season, more especially the want of sunlight in which the Fig rejoices. For the same reason all about here the outdoor Grapes which are grown on many cottage walls were also a failure. Indeed they have been so grievously attacked with mildew that I question very much whether they will recover it.

I have said nothing about wall fruit, for in truth my wall trees are in their infancy. Last year was an unfavourable one for planting and maturing young wood. I know nothing about them, and fully expect mine are all wrong. Unfortunately I have no one about here whom I can ask to look at them for me, and so they must take their chance. Mr. Baines was kind enough to give me a lesson the other night at the Horticultural Club and I have gone on that; but I rather fancy the trees were not very shapable when I received them, and so if they are very bad I shall have some excuse to fall back upon.

I do not think I should have ventured to write thus of my little belongings, but that many have expressed to me their satisfaction with my notes of former years, and that I myself have benefited by some such similar notes from others.—D., Deal.

THUNBERGIA HARRISSII.

THIS is seldom met with, but when well grown it ranks amongst our best flowering evergreen stove climbers. It is of easy growth; and when in bloom, at this time of year, besides

adding to the beauty of the house in which it is grown, it assists in helping to fill the out-flower basket at this dull and difficult time to get a good quantity of flowers. When cut and sent in the blooms have been taken for Gloxinias: this alone will show how pretty they are. It is amongst the cleanest inmates of the stove, its greatest enemy being red spider; but by proper drainage and liberal supplies of water when growing freely, with daily syringings, this pest can be easily kept in check if not entirely prevented. Like most other climbers it grows better and makes larger plants when it can be planted out in a prepared border having ample drainage, with a compost of rough fibry loam, leaf mould, and a little sand and charcoal, all well mixed together. Having a naked piece of wall at the north side of our plant stove, on the top of which rest the glass lights, we covered this wall with *Lycopodium denticulatum* by making a network to hold about 10 inches wide of rough loam and leaf mould, and pricking the *Lycopodium* all over. I have planted *Thunbergia Harrisonii* on the top, along with several other creepers, and trained them to wires run across the house, about 6 inches from the glass, and they have done well: some of them are in flower now, such as *Ipomoea Horsfallii*, *Thunbergia*, and *Euphorbia Jacquiniiflora*. This does well, and throws large spikes of bloom. The graceful creeping Fern, *Lygodium scandens*, runs up the wires; and when trained carefully can easily be cut off in long pieces, for drooping gracefully from epergnes.—A. H. —(The Gardener.)

CHAPTERS ON INSECTS FOR GARDENERS.

No. 5.

My good friend Jones was considerably discomfited the other day when I let him into a new fact concerning the details of fly history. It is observable with most persons that they cling closely to the beliefs about natural history which they acquired in boyhood, erroneous as these must often be; and so my friend held it as "next to gospel" that all flies can do in their perfect state is to suck honey or other fluids by means of a proboscis. I assured him that many of these flower-loving flies have a capacity for doing something more than this, being, in truth, provided with vigorous maxillæ or jaws, by means of which they masticate the pollen of flowers. It is not easy, obviously, to watch and catch flies in the very act, but dissection has disclosed in the internal structures of some of these species a compact mass of undigested pollen. The case is therefore as clear against these predators, if so they are to be spoken of, as when a pickpocket is caught in a crowd with a watch in his hand which does not belong to him. But as these flies do not merely eat the pollen, since they serve also as media for its conveyance from flower to flower, their position as agents in fertilisation evidently requires us to regard this fact in their economy with favour rather than with the reverse feeling. Jones certainly—these circumstances having been made clear to him—did admit that Nature produced, amongst a host of species, more pollen than was actually required, favouring thus the hypothesis that it is intended partly to serve as food for other creatures; still he didn't like the idea of this wholesale transference of pollen by winged insects, seeing that, as he lucidly put it, "species might get mixed up everywhere by-and-by." Against this view I could well urge that flies have doubtless had the same habits they now have for many centuries; therefore apprehensions about a general fusing of species in a genus or order are needless.

To resume, however, at the point where we paused in the last paper, we pass from the little *Cecidomyiidae* to their next of kin, the *Bibionidae*, insects not quite so slim and slender, yet gnatlike in appearance and mode of flight. It is only necessary to name *B. Marci* (strangely called also "St. Mark's Fly,") to remind the gardener of an unpleasant enemy in this family, which shows itself by its effects both in the flower garden and also among Strawberry beds, the small hairy grubs devouring the roots of plants. Occasionally they muster in companies, and then necessarily the injurious effects are more marked. The fly itself has a curious "phiz" in the male specimens, the front of the head appearing as if it were occupied by one large eye. On a closer inspection we perceive the organs are separated by a narrow line; the female insects, however, have the eyes rather small. Others of the *Bibionidae* have subterranean larvæ, feeding promiscuously on the roots of grasses and various plants, and some feed on decaying matter such as dung or vegetable refuse, and therefore to a small extent they are of use. On the whole the *Bibionidae*

occupy a neutral position, though a few species are to be ranked with the enemies of the horticulturist. The imago, or perfect fly, in this group has no partiality for flowers.

A passing word is all we need bestow on the small family of the *Simuliidae*, curious to the naturalist because the aquatic larvæ spin a cocoon for their pupation, by which the insect is only partially protected from the action of the water. The flies are distinguished by the peculiar broad and flattened aspect of the tibia and the first joint of the tarsus—that is to say, of the shank of the leg and the first joint of the foot. In northern regions the familiar term for these insects is "Sandflies;" in warmer latitudes they share the appellation "Mosquito" with the *Culicidae*, the Mosquitoes proper. In Britain the Sandflies are not numerous enough to be specially troublesome, nor do they bother the gardener more than any other man.

As much might almost be said of the large family of the *Midges*, numerous in species, numerous also in individuals. These have slender legs, which are not flattened, and we distinguish them from the true gnats by the costal vein or ray, which is continued along the tip of the wing amongst the gnats, while it ends before it reaches the tip in the tribe of the midges. Nearly the whole of the larvæ are aquatic. The slim red maggot known as the bloodworm is a familiar example. One or two species have larvæ making their habitations in moist dung; and one species at least, probably ranking in this family, the Pear Midge (*Sciara Pyri*) infests our orchards, the larvæ burrowing into the ripe fruit of the Pear and causing its downfall; but it hardly stands out as a prominent foe of the Pear, though it is sufficiently unpleasant to bite into a fruit that contains a long track filled with the frass of this larva. Many of these midges have the antennæ beautifully feathered, the adornments, as with the gnats, being strictly masculine; the feminine antennæ are, with scarcely an exception, straight and simple. Also, like the gnats, the midges have a propensity for attacking the skin, though some species are quite harmless, and on the whole they occasion little annoyance compared with the *Culicidae*. I would not advise any horticulturist to rest his faith upon the popular belief that when a company of midges are seen performing their aerial, and certainly graceful, evolutions at the witching hour of twilight it is a prognostic of an approaching fine day. It is at least an indication that at the particular moment a calm prevails, for these flies do not care to face a breeze, but they will sometimes be out on the wing when it is actually raining, and dexterously dodge raindrops one of which would carry a midge to the ground. Some gardeners, I fancy, have a dislike to these flights of midges, supposing that when they occur in gardens, as they frequently do, they attract insect-eating birds to the spot, and induce the birds, if their hunger is not sated, to attack buds or flowers. I hardly see any good reason for this apprehension, nor for any similar fear in the instance of the true gnats.—J. R. S. C.

ROYAL HORTICULTURAL SOCIETY.

A VERY interesting and faithful account of the rise and progress of the Royal Horticultural Society from the pen of Mr. W. A. Lindsay appears this month in "St. James's Magazine." Mr. Lindsay was for some time Secretary of the Society, and had every opportunity of making himself acquainted with everything connected with its past and present history by reference to documents and other means at his command, and the way in which he has performed his self-assigned task is most creditable to him. The origin of the Society is thus given:—

"On April 17th, 1809, was granted a charter incorporating the Horticultural Society. The Earl of Dartmouth was created President, Mr. Charles Greville Treasurer, and Mr. Richard Salisbury Secretary. The members of the first Council were the Earl of Powis, the Bishop of Winchester, Lord Selkirk, Sir Joseph Banks, Messrs. Acton, Elliot, Knight, Miller, Trevelyan, Dickson, Hoy, and Smith. Three members were to retire at each annual meeting, and to be replaced by others. Between 1804 and 1809 a gradual increase of members had taken place. The grant of premiums had had the most beneficial effects on practical horticulturists, and patronage only was required to insure success. The publication of the "Transactions" in the form of volumes began in 1812, and it may here be stated that the total number of these volumes cost the Society no less a sum than £80,000. They were without doubt a powerful means of attracting support, and are still of considerable literary value.

"At this period of its existence the Society paid the modest sum of twenty-five guineas a-year to the Linnean Society for a share of their accommodation in Gerrard Street, thus commencing a friendship between the two bodies which has always continued to subsist."

From this we learn the composite form of the new Council—a form which it has been too much the practice in later times to ignore. In the original charter James Dickson, Thomas Hoy, and William Smith are styled "gardeners." Aiton (not Aston) was the gardener at Kew, Miller was the son of old Philip Miller of the Botanic Garden at Chelsea, Smith was gardener to Lord Liverpool, and Hoy was gardener to the Duke of Northumberland at Syon. Now the effort is to keep practical men off the Council, and we have no doubt that this is one element in the failure of the Society's endeavours to advance horticulture at the present time.

Mr. Lindsay proceeds—

"In 1811 Mr. Knight succeeded, on the death of the Earl of Dartmouth, to the presidency. He retained the post until his own decease twenty-seven years later. A large portion of the Society's more valuable work was thus performed under his guidance, and is now bound up with his memory. But in 1811 and following years the causes which impeded the early progress of the Society increased in force. Europe was the scene of universal war, and England continued to be the principal European power in arms against France. At such a time, and amid the popular excitement in which all classes of society were involved, little progress could be looked for in such an enterprise. Elections were few, but a careful Council kept the expenditure within the income, and each year added a small sum to the Society's balance. This amounted to £258 in 1815, when the return of peace restored the thoughts of the people to legitimate channels. The labours of the Horticultural Society had entitled it to be considered as one of the most useful institutions, and all things thus tended to the approach of prosperity. In May, 1816, there were invested in the Three per Cents. £1000. Elections took place with greater frequency, and in 1818 the income was £1,791 and the expenditure £1,713, while the funded property was £1,400, and the value of the stock £3,000 in excess of all debts. An experimental garden was now established at Kensington and a nursery at Ealing. A house in Regent Street was bought in 1820 for £4,200, and although the subscriptions were raised from two to three guineas, new Fellows poured in at the rate of two or three hundred a-year."

A long run of prosperity followed, and the Society was enabled to send out collectors whose names shed a lustre upon it which even yet remains. Forbes, Parks, Don, Douglas, Hartweg (whom Mr. Lindsay omits), and Fortune are names that will live as long as horticulture exists. Mr. Lindsay is in error in placing Mr. Reeves among the Society's collectors and the predecessor of George Don. Mr. Reeves was a gentleman who held an appointment under the old East India Company and merely acted as the Society's correspondent; but to him the country is indebted for some of the most popular and ornamental of its garden plants. The *Glycine sinensis* and the Chinese Primrose are alone sufficient to keep his memory fresh in the minds of all lovers of the beautiful. To his son, Mr. John Russell Reeves, who was lately a member of the Council, the Society and the country are equally indebted for many valuable introductions. But evil days began to dawn, and, says Mr. Lindsay, "the Society now began to experience reverses."

"An officer absconded with a large sum of money, and a feeling of distrust for the management resulted. A further cause of dissatisfaction was the abandonment of an annual dinner and the substitution of public breakfasts, thus inviting fashionable support rather than attempting to maintain and stimulate that *esprit de corps* which is so essential to all public bodies. The breakfasts were abandoned in 1831, and were succeeded on the suggestion of Dr. Lindley—the Assistant Secretary and well-known botanist—by garden exhibitions. These became exceedingly popular, and retained public favour for a long period of time. Nevertheless the financial position was most critical. A committee of inquiry was appointed in 1830, which reported that the debts amounted to £30,243 and that the value of the property was but £16,500. The cost of the garden works had exceeded the sum subscribed for them by £39,000. The management was condemned, and in consequence Mr. Sabine resigned the secretaryship, to be succeeded by Mr. Bentham. A determined attempt was made to retrieve the Society's position, but it was considered of paramount importance to maintain the scientific work. Between 1830 and 1855, in addition to the money allotted to the payment of debt, £11,000 was spent on the garden, and £7,000 on foreign importations.

"Notwithstanding the enthusiasm which all these labours and

successes must have stimulated, the Society was much hampered as all such bodies are by the non-payment of subscriptions. No less a sum than £12,879 had to be abandoned as irrecoverable between 1824 and 1855. Had it not been for this unhandsome conduct, it may be doubted whether any serious debt would ever have been incurred. At no time since 1823 had the liabilities exceeded £14,331, and at the period of which we are speaking the total debt had been reduced to £9,986."

The exhibitions now began to fall through competition of rival societies nearer town; the house in Regent Street and the valuable library were sold to pay liabilities, and—

"an office was then acquired in St. Martin's Place, Trafalgar Square, at a rental of £80 a-year. The effect of these changes was not merely to reduce the annual expenditure, but to bring down the liabilities to £4,694, as against a floating property valued in 1857 at £14,674."

The Society was, therefore, not in the straits which some are so fond of representing it to have been. A debt of £4,694 as compared with the £55,000 it now owes is but a small affair, and we commend this to the attention of gentlemen who at the annual meetings find great delight in telling the Fellows of the abject state of the Society when the Royal Commissioners so benevolently took it by the hand.

Since that period the career of the Society has been one of signal failure, notwithstanding every attempt to place it on a prosperous basis. How has this arisen? The answer is not far to seek. It is simply because a grand scheme to supply entertainment to the residents of a fashionable suburb of London is incompatible with the placid pursuits of horticulture. To maintain an establishment permanently, such as that which it has been sought to set up at South Kensington, subject to the influence of the caprice of fashion, is an impossibility. It must have its vicissitudes, as all such places have, and its fortunes must follow those of every place where the cost of their construction has been so enormous that no reasonable amount of income can possibly make them financially successful.

The Society is now passing through a crisis, whether it is for the better or the worse only time can tell; but of this we are perfectly certain, that so long as this state of things continues it is a misnomer to call it a Horticultural Society, and a fallacy to suppose that any good can arise to horticulture by maintaining it in its present deplorable condition.

We commend Mr. Lindsay's paper to the careful attention of all who are interested in the Society's welfare.

OUR BORDER FLOWERS—MONKEY FLOWER.

Musk is a universal favourite. It is a plant that will exist almost under any circumstances, provided it can have light, air, and moisture. Especially among our humble friends Musk is enjoyed, and to hear what enjoyment their little floral pets afford them is a great satisfaction, and who would desire their pleasure to be less? Musk, in addition to its perfume, is an obliging subject—at home alike in garret, cell, or palace. It flourishes in sunshine and shade, and is not over-particular as to soil. We will now leave *Mimulus moschatus*, and glance at some others of the family, which embrace colours that no other flowers can approach.

The *Mimulus cardinalis* section require a good rich soil to develop themselves. They are moisture-loving plants, yet should be provided with efficient drainage, and then water cannot be too freely given them. They may be increased by seed and division at any time. *M. cardinalis* was at one time looked upon with favour as a pot plant. *M. atrosanguineus* is a grand acquisition to our border flowers, and is a useful plant when well-grown for indoor decoration. It is well adapted for exhibition purposes as an herbaceous plant, and continues in bloom a very long time. *M. eupreus* should be in every garden. It is of very dwarf habit, producing its flowers in great abundance; though the individual blooms are short-lived the plant gives a continuous succession of flowers for a long time.

M. Moodii, *M. maculosus*, *M. Youngii*, *M. tigrioides*, to say nothing of *M. inimitabilis* flore-pleno, are all very desirable for winter and spring decoration indoors, and for borders in summer. By liberal treatment the plants may be grown to a large size, and when coming into bloom they should be placed in pans of water an inch deep. They are all the better for having weak liquid manure occasionally, for if they are not

kept growing freely they soon become infested with green fly. When under glass they should have thorough ventilation. They are all easily increased by seeds and division.—*VÉRITAS.*

THE ELM.

SOME writers think that the Elm (*Ulmus campestris*) is not a native of this country, but they have no reasonable grounds on which to found such an opinion. The name Elm is Anglo-Saxon, and appears to be derived from a root-word indicating height and strength. As corroborative evidence, justly cited by Dr. Hunter are nearly forty places in England, mostly mentioned in Domesday Book, which have their names compounded with the name of Elm.

Whenever any plant has associated with the times of its leafing or flowering the seasons for performing garden operations, that is a certain indication that the plant was in England, as lawyers say, "before the memory of man runneth to the contrary." The Elm is one of those guide plants accepted by gardeners in the olden time, and they had this rhymed kalendariol warning:—

"When Elm leaves are as big
as a shilling
Plant Kidney Beans if to plant
'em you're willing.
When Elm leaves are as big as
a penny
You must plant Kidney Beans
if you mean to have any."

Nor were our countrymen the earliest to deduct indications from those leaves, for Virgil wrote that

"Each trembling leaf with
some light vision teems."

Miller states that "Queen Elizabeth is said to have planted an Elm with her own hand at Chelsea. It went by her name, and I remember it a stately flourishing tree, except that the top was decayed. It stood at the upper end of the church, and marked the boundary of the parish on the north side. It was felled on the 11th of November, 1745, and sold for a guinea to Sir Hans Sloane, Bart., lord of the manor. It was 18 feet in circumference at the bottom, and 110 feet high." But Gilpin tells of one far larger that was felled in 1874 on Sir Walter Bagot's Staffordshire estate. Two men were five days in felling it. It was 120 feet high, the stool 47 feet in circumference; 160 naves for wheels, and 8680 feet of boards were cut from it, and the whole tree was computed to weigh 97 tons.

No tree is better adapted for the formation of an avenue, and not one is more used for the purpose. The most striking example we remember is that at Strathfieldsaye, a mile in length. The fitness of Elms for avenues arises from their branches crossing at a pleasing angle, growing pendant in age, and far above the heads of the passers beneath. Gilpin truly observes that no tree is better adapted to receive grand

masses of light, nor is its foliage, shadowing as it is, heavy in effect. Its leaves are small, commonly hang loosely, and the forms picturesque. It is the first tree that salutes the spring with its light and cheerful green, a tint contrasting agreeably with that of the Oak, the early leaf of which has usually an olive cast. In autumn also the yellow leaf of the Elm mixes as kindly with the orange of the Beech, the ochre of the Oak, and other hues of the fading wood.

It was of the common Elm that Hood sang—

"The tall abounding Elm
that grows
In hedgerows up and down,
In field and homestead, grove
and park,
And in the peopled town;
With colonies of noisy rooks
That nestle in its crown."

These lines are faithfully descriptive of this Elm, for as a park, hedgerow, and homestead tree it is very familiar, and few trees are more imposing. It is also true that the rooks have a great partiality to the Elm, and it is of its twigs principally that they build their nests. It is not, however, a tree well adapted to the "peopled town." In the country it is majestic as the avenue noticed, and the grand trees at Windsor and other places attest, but in smoky towns Elms are seldom long-lived, and furthermore their peculiarity of suddenly parting with limbs in storm or in calm render them unsafe. It is a singular fact, and not clearly accounted for, that in calm, still, sultry days the huge branches are prone to fall with a crash without a note of warning. On that account it is not suitable for towns, nor yet for village greens where "men do congregate." The Plane is the tree of trees for towns, and for village greens the Chestnut is of free growth, and affords luxurious shade. Who can think of planting village trees without calling to mind the rural warblings of Longfellow in the well-known song—nay, is it not a hymn?

"Under the spreading Chestnut
tree the village smithy
stands."



FIG. 30.—*ULMUS CAMPESTRIS.*

Our advice is, therefore, that Elms be planted only in parks, hedgerows, or avenues in rural districts, and not in towns or villages.

That only applies to the subject of our illustration, for there are other varieties of the Elm singularly ornamental and perfectly safe. Drooping Elms are particularly effective as lawn trees. They are quick growers, and their outline is graceful, speedily forming natural bowers if a little care is taken to train their pendant branches; and the gold and silver variegated sorts afford a fine relief to the dense greenery pervading landscape masses.

U. campestris and its allies are raised by suckers and layers, but chiefly by seeds, which should be gathered in June as soon as ripe, and sowed in light mellow soil. The ornamental varieties are mostly grafted on stocks of *U. montana*. The

trees of all the family may be successfully transplanted even after they have attained to a considerable size, their fibrous roots becoming speedily re-established in fresh soil.

BEGONIAS FOR SUMMER AND WINTER.

ATTENTION has been prominently directed to the new varieties of the tuberous-rooted section of Begonias, and their great value as summer decorative plants has been pointed out. I admit their great usefulness, indeed they may be regarded as indispensable for summer decorative purposes; but I would not have some of our old favourites neglected, and especially the species that bloom throughout the winter and spring months. Where cut flowers are in great request, and where heat is provided, Begonias should be cultivated freely, for they afford an unfailing supply of elegant sprays. For this purpose some of the old summer-flowering species and varieties are extremely useful, as *parvifolia*, *Digwelliana*, *Weltoniensis*, *semperflorens*, &c., while *B. Pearcei* (tuberous), for beauty of foliage and flower combined, is surpassed by few stove plants. *B. Pearcei* is best raised from seed; the seedlings making beautiful plants, which flower the first season. The others should be increased by cuttings. All of them are extremely useful, and of the easiest culture.

But I would draw attention more particularly to the useful old sorts which flower in winter. For many years I have had to meet large demands for cut flowers, and without these Begonias I could not have succeeded in supplying these demands. Not only their soft quiet colours, but the profusion of their flowers, and the elegance of their sprays, have been found invaluable for many purposes of decoration.

B. semperflorens is appropriately named, for it is ever blooming, and in winter is very valuable; even more so is its variety *semperflorens Saundersii*. The flowers of this are white, upright, and having compact trusses. They are singularly effective associated with the bright glossy foliage of the plant where arranged with other cut flowers. The plant is of dwarf and compact habit; and arranged with Ferns is, in the winter especially, highly ornamental.

B. insignis (Showy), is a very old favourite, and it also is appropriately named, for its massive yet elegant semi-pendant trusses are indeed striking. It is one of the most useful of winter-flowering stove plants, and will afford unlimited supplies of cut flowers from October till May. The plants also are exceedingly ornamental, and besides their intrinsic beauty set off to greater advantage such high-coloured plants as *Poinsettias*. A combination of these plants with Maiden-hair Ferns cannot fail to be admired.

B. fuchsoides is another species of great value. Its coral-like pendant flowers are almost unequalled for forming a drooping fringe from the margins of epergnes and other table ornaments, and especially when viewed by artificial light. The plants are also attractive in the stove, especially when grown on single stems, showing themselves above their neighbours, which they do with effect, and without doing injury to the plants beneath. Placed at intervals near the margin on both sides of a stage, and trained to arch over the pathway, their points meeting overhead, they form a distinct and pleasing feature in the arrangement—free, elegant, and bright. Plants of a foot high flower most freely in thumb pots. I have so grown them by hundreds for turning out of their pots, and furnishing fringes to sides of hanging baskets in the conservatory and boudoir.

B. manicata is another fine old plant when well grown, flowering in spring. The massive habit of the plant, and the large foliage, being surmounted by spikes containing thousands of delicate flowers, resembling a cloud by their airy lightness and elegance.

B. nitida is also eminently worthy of culture, and in the depth of winter will produce trusses of bloom not much inferior to those of *Hydrangeas*. These old-fashioned plants are real gardener's friends if treated in a friendly manner. They require heat, and, this being provided, their culture is exceedingly simple.

The plants flower best when young, and they should be renewed by cuttings annually, the cuttings being inserted at the present time if large plants are required. Smaller flowering plants may be had for special purposes by striking the cuttings any time during the summer. Loam, leaf mould, and peat will grow them well, the last shift being into rich loam. They should be grown near the glass in the stove until June, when frames heated by the sun will be suitable for them until

September, when they must be replaced in the heated structure, and they will produce their flowers freely for fully six months.

These good old plants are not cultivated so well and extensively as their merits deserve. I cannot conceive how the full winter supply of cut flowers can be produced without them, and therefore I call attention to them at a seasonable time for raising a supply of plants, as supplemental to the useful articles which have recently appeared on the more modern type of summer-flowering varieties.—A NORTHERN GARDENER.

PRUNING ROSES.

[We publish the following letter from a correspondent, with a reply from one of our contributors, as it opens the whole question of pruning Roses.]

As you have sent me a query from "E. P. B." as to the proper method of pruning Roses on the Manetti stock, and as the question is one of great importance to Rose-growers, I ask you to publish the letter with the following answer which I venture to send; at the same time I am obliged to confess that with the present very fickle and uncertain season it is difficult to give definite advice.

"I shall be obliged for advice as to pruning my Roses. They are all dwarfs on Manetti stocks. They are in three lots. No. 1, planted last year and untouched. No. 2, plants planted here November, 1874, moved January, 1876. They were moved direct from their former quarters; about half an hour out of the ground. No. 3, a lot from a nursery received last week.

"State of different lots—No. 1 now making strong shoots. No. 2 shooting out, but not so strong as No. 1. No. 3 the usual nursery stock, but very strong. No shoots pushing. The aspect is E.S.E. When are they to be pruned, and how? Some say the lower you cut them the better. I dread cutting a bare stick for fear of no shoot resulting. Tell me when I am to prune them, and to what extent (they are all H.P.'s). I pruned No. 1 lot last year in February. It was the worst season for Roses that I can remember—cold, wet. The young shoots were first cut up by the dry parching weather in April, and the poor blooms washed out by the subsequent rains. Despite the weather I had magnificent blooms on Abbé Bramet (which, by the way I do not see among the chosen in the *Journal of Horticulture*), Annie Wood, and Alfred Colomb. These three seemed to disregard weather. The elevation here is 450 feet, and now, though we have had some frost, the Tartarian Honeysuckle is in leaf and the Mezereon in flower. It is not easy to know how to manage in such variations of temperature.—E. P. B., Co. Dublin."

Here there are three classes of Roses to deal with, but I presume all are on the Manetti stock. The first planted last year and untouched. I am obliged to ask, Untouched this year, or untouched from their first planting? If never pruned at all they may have been very materially injured; if it only means that they have not been pruned since their first growth I would say, Do not be afraid of the knife; in fact, I should give the same advice in both cases, but should fear if they never were pruned since first planted that they will not break kindly now; still as they are on the Manetti it is far better to cut well back, thin-out very weak shoots altogether, and do not be afraid even if you see no eye at the base; if only the plants have made good roots they will be sure to push.

No. 2, plants put out in November, 1874, and moved this January. As the season is forward and they have been moved carefully they are not likely to have received much check. I should recommend you to leave them for ten days or a fortnight longer, or about the middle of February, and then prune as you would have done if you had not transplanted, but rather more severely. Out out all weak wood; prune the strong to five or six eyes, the medium to three or four.

Next, No 3, as to new nursery stock. Plant them as they are, or rather, if you have planted them, leave them as they are till the season has further advanced. If the weather continues open there will be an inclination to form roots, but new buds will not be formed for some little time, probably not till the middle of March; but about the second or third week in March prune back severely, the weaker shoots remove altogether, the stronger prune to three or four eyes. I know some will say I am recommending a severe measure, but experience has convinced me that "spare the rod and spoil the child" is an adage true with regard to Roses, and in some cases, if not most, utterly fallacious as regards the child. Roses will answer under severe treatment, but children seldom.

Some persons say no amateur ought to prune his own Roses, as they do not like to cut away promising buds. There are exceptions to all rules. Thinning-out and removing all old and weak wood is, on the whole, more important than pruning-back strong wood; in fact, last year I left some La France Roses, which began to push early, quite unpruned, and I had some remarkably fine blooms from them, but then the growth was strong, and there were no feeble shoots.

Roses on Manetti bear cutting-back far more than standards, because the object is not so much to produce symmetrical heads as to obtain good blooms. As a rule, so long as the Manetti stocks have good roothold no one need be afraid of cutting-back too severely. I have had my Roses too often cut down by frost to the snow line, and make all their growth from apparently barren eyes or below the ground, ever to be afraid of severe pruning. Last year, for instance, the frost of December 31st, 1874, and January 1st, 1875, killed my Céline Forestier in every case down to the ground, but I never saw much more vigorous growth than every plant made. Many others were severely injured, but, with rare exceptions, all Roses pushed vigorous shoots from below the snow line.

I can fully appreciate your correspondent's admiration of Alfred Colomb and Annie Wood. They are two really first-class Roses, though Alfred Colomb is the most certain and best opener. Still, Annie Wood is not far behind, but Abbé Brammerel will, I fear, disappoint him on second trial. The petals are coarse and rough, and the outline uncertain, though it may eventually prove a better garden Rose than I give it credit for. It will never earn many laurels on the exhibition-table.

This winter which has shipwrecked many weather prophets who ventured to predict an arctic winter of unexampled severity, will, I fear, be likely to prove a treacherous one, and unless we have a backward February and March, spring flowers will be too forward, and fruit blossoms will have to contend against the uncertain weather of April and May. With us in Yorkshire the last week in May is too often the one which plays havoc with fruit prospects. I have known even in the midland counties Potatoes with young tubers fit for the table cut down and blackened with a single night's frost the first week in June.

Ireland may be free from these sudden variations; still it is better to try and guard against them by pruning-back sufficiently so as to prevent the early growth at the end of unpruned shoots being relied upon for blooms. Apparently this year the Continent is bearing the brunt of the winter, and the south of England—south of the Trent—has been colder than the north, the average of Stornoway far warmer than Paris, and Valencia in Ireland warmer than Biarritz.—C. P. P.

WAB WITH INSECTS—VENTILATION.

Most willingly do I confirm what Mr. Taylor has stated on page 86, that the best antidote or preventive against insects is careful ventilation, low night temperature, and a moist genial atmosphere. Under such conditions red spider and other pests are comparatively innocuous, for the plants or Vines which they attack are, under the above conditions, rendered invulnerable by the stoutness of their healthy foliage.

It is possible that some situations are more favourable than others to the increase of red spider, yet I think that the practice referred to would keep it outside the houses.

I have grown Vines in a dry district for many years, and on the border adjoining the vineries I have seen the French Beans literally devoured with spider, but I am not conscious of ever seeing an insect on the Vines or on the plants, including French Beans, in the vinery, yet I seldom syringed the Vines, but treated them precisely as detailed by Mr. Taylor.

A night temperature of 50° to 55° by fire heat, followed by a day temperature of 90° by sun heat, with proportionate moisture, were the conditions that I preferred. The Vines had then a good "grow" by day and a good "rest" at night, and were kept healthy and clean.

Of vital importance is early ventilation. If the admission of air is unduly delayed no amount of opening the lights will prevent the thermometer from rising to unpleasantly high figures.

As an example of the power of early ventilation I may quote a circumstance which bears on this matter. My neighbour erected a vinery at considerable cost, but was very uncomfortable as to its being insufficiently ventilated. It was not possible, he said, even by opening the lights and doors, to keep

the thermometer below 120°. I visited his house, and found that with the fullest admission of air the thermometer was really at 110°. Suspecting the reason I requested the owner to meet me at 5 A.M. the next morning. We found the thermometer at 62°. I at once slightly opened the lights, and as the temperature showed signs of rising I opened them further. At six o'clock it was 63°, at seven 65°, at eight 68°, at nine 75°, at ten 79°, at eleven 81°, at twelve 84°, at one o'clock 86°, and at two o'clock at 89°. It did not rise beyond that until the house was finally closed, when, with a sinking sun, it was designedly permitted to rise to 93°, with every part moist.

The thermometer outdoors was 2° higher than on the day preceding and when with the doors open the vinery was at 110°, but now during a hotter day, by early and careful ventilation, it was kept below 90° with the doors closed.

That was a conclusive lesson, and from that day to this I have never heard the owner of the house complain of inefficient ventilation, but he has for some years produced splendid crops of Grapes, and no red spider.

The practice referred to of a high day (by sun) and a cool night temperature is but a lesson from Nature, when during the bright and often hot September days and chilly nights not only Celery and Cabbages, but Vines on walls, and Cucumbers, and Vegetable Marrows on ridges, are in their zenith of luxuriance, and literally outgrow the red spider.

I have only one boast as a gardener, and that is that I have had the charge of vineries for twenty-one years, and I have never been troubled with red spider, and have seldom syringed the Vines. Simply as avoiding even the semblance of egotism I request the Editors to withhold my name.—YORKSHIREMAN.

OLD TREES.

I AM amply compensated for venturing to write on this subject by the salutary suggestions and practical remarks which my letters have elicited, and when I find Mr. Robson regarding me as too "radical," and "WILTSHIRE RECTOR" considering me too "conservative," I accept them as good proofs that I hold no extreme opinions, and am not likely to advocate "dangerous innovations."

I have no pomological fancies—no pet theories to establish—but desire to see useful fruit culture extended, and old as well as young trees respected and tended. Miniature trees under finger-and-thumb government are beautiful, and also in a measure profitable, but to produce the tons of fruit necessary to supply the masses, the air above as well as the earth beneath must be utilised. Large trees, even if old, must not be hastily sacrificed before young trees are established, which in too many instances has been tantamount to "killing the goose laying golden eggs."

I would now refer briefly to two letters appearing on page 92. I will take the last first. "J. J., Lancashire," makes use of the expressive vernacular "buckheaded." He is a radical both in words and action, and has proved what I have proved repeatedly, that it is often more profitable to "buck-head" a tree than to uproot it, and also, as I have found, than to merely "top" it. He has made clear what I attempted to explain, and his practice is worthy of notice. "J. J." has "never before written on any subject and does not know the names" of many ornamental plants. He can, however, write clearly on useful subjects, and I for one should be glad for him to write again, not because he agrees with me, but as being able to give practical information on a matter of importance—the useful supply of hardy fruit.

I now turn to "WILTSHIRE RECTOR." Our friend is right that my loss from young trees was principally by growing too many kinds, and I mentioned it as conveying an useful lesson. Had the whole consisted of either Manx Oodlin or Dunselow's Seedling (mentioned by "J. J."), or any other approved free-bearing sort, without doubt I should have saved half my £40 fine.

The Rector wishes, what all rectors should desire, to see useful fruit trees in cottagers' gardens. It is a most worthy wish, and I am acquainted with not a few of the clergy who have endeavoured to carry so laudable an idea into effect. From long residence in the country I have found how much cottage homesteads have been prized which contained useful fruit trees. The tenants of such have been regarded by their neighbours as either fortunate or favoured, and as being the holders of prizes. Such tenants seldom emigrate or clamour for reform. Fruit trees are magnets binding a man to his home, and if that home is one which he cherishes, he will

strive to make himself worthy of its possession, lest a more worthy man should be appointed to reign in his stead. I was once "one of them," and know what it has been to trudge eight miles a day, and work with them for 2s., therefore I know their views, and that I speak the truth on this matter.

I also know something else, and that is, that they think owners of the gardens should plant the trees, and who shall prove that thought wrong? Whoever plants them the trees become part of the freehold, and indeed they increase its value as many a rent roll proves. I wish all rectors would use the influence which they possess in inducing landlords to make the homes of their humble neighbours homes indeed, by a distribution of fruit trees, as one of the neglected means of establishing a contented and home-loving peasantry. It may be that landlords imagine that the "sons of toil" do not care for fruit trees, but I can speak for my "old friends," and state that they do care for and prize them highly.

If the planting of fruit trees by owners could be brought about, I would not dispute for standards or pyramids; the trees in such gardens would soon settle that point. For the gardens of the clergy and those similarly circumstanced pyramid trees are highly appropriate, as being ornamental, instructive, and also profitable; but for filling with fruit old churns, clothes-baskets, &c., I like to see trees requiring a ladder once or twice a year. It is the preservation of such trees that I urge as important, trees which I fear have not always been estimated at their proper value. I have more to say on the subject of "old trees," but I must now be "off to work."—A RADICAL CONSERVATIVE.

In your paper of January 20th I read an article on old Apple trees. I think the writer of it has exaggerated the difficulties of dealing with them. I do not doubt that many Apple trees are too old to be cut or grafted, but my experience has taught me that a very large proportion of full-grown trees may be so dealt with.

Twenty years ago I purchased a farm with several acres of older orchards of old-fashioned sorts, full-grown trees, in a very crowded neglected state, and producing very little cider. I began (first thinning the tops of all), by cutting-off the whole heads of many trees and grafting them with better kinds. Of these a certain number died in some years, chiefly blowing down and had decayed roots. I then adopted the plan of grafting a part of a tree, say one-fourth to one-half of the higher branches, and in a few years gradually grafting the remainder. So far I have lost none of these trees, the grafts have all done well, and the wild shoots from the old stocks have been encouraged, except when their tops interfered with the grafts, till the trees had formed such large new heads that the wild shoots were unnecessary to help to furnish a top to give action to the roots. My consequent plan now is, to cut off a portion of a head and graft it each year for four or five years, as I may judge the age and condition of the old stock requires.

The general result has been, that at the end of twenty years my orchards are pretty full of old regrafted trees, which produce five or six times the quantity of cider that they did when I first began to regraft them.—A. Z.

MOAT BANK,

THE RESIDENCE OF ABRAM BASS, ESQ.

ALL connected with horticultural pursuits are justly proud of the patrimonial seats of the nobility and gentry, and the ability with which our "great gardens" are managed. Few of those places can be visited without their imparting instructive lessons to the observant visitor, and descriptions of them seldom fail to interest and add to the stores of knowledge of which members of the "ancient craft" are ever in search.

But besides the historical places of our noble families there are, scattered over the country in more or less of obscurity, those who are earnest workers in a small way, yet who bring to bear abilities worthy of recognition in the culture of some special flower or fruit. If we wish to see our national flower cultivated for "very love of its beauties" we must enter the precincts of some secluded parsonage, and there we see the Rose enthroned in regal dignity. It is so with many florists' flowers, and not unfrequently also with fruits.

How ably Grapes are grown by amateur skill was described on page 98, and now is noticed an unpretentious garden where not only Grapes but other fruits are cultivated to a degree of excellence that many gardens of greater fame might envy, or at any rate be proud to own.

Moat Bank is situated about two miles from Burton-on-Trent on the high ground overlooking the town and a great extent of country. It was once a Roman station, the moat still existing and filled with water, the "stronghold" which it encircles being now a plantation and orchard. About sixteen years ago Mr. Bass selected this commanding and healthy site for his residence, and erected thereon a Gothic structure from plans of the eminent architect Mr. Street of London. Gothic houses are frequently dark and not always convenient; but here it is not so, for a more light and cheerful, and also homely and convenient residence, it would be difficult to find.

From every room the view is splendid. From one standpoint the winding Trent may be seen in eight or nine places; from another Cannock Chase, Brethby, and the hills of Derbyshire are seen. Alton Towers, Tutbury Castle, Bar Beacon, twenty-five miles distant, are also within the line of vision, and the eye in sweeping the panorama can distinguish the spires and towers of not less than forty-eight churches. Such is the salubrious and commanding position of Moat Bank.

Now let us look at its gardens. In extent they are small, but in quality they are great. Surrounding the residence are Conifers in great profusion and, considering their age, of marvellous growth. The staple of the soil is clay; but that the shrubs and trees were not only well planned but were well planted by Mr. Barron is clearly manifest, and that they have been equally well tended by their owner their health and shape abundantly proves. The Deodars are numerous and exceedingly fine, also are Wellingtonias and Pinus lamiocarpa, grandis, &c.; and the Yews, Hollies, and other shrubs are of a size to render it a matter of surprise that the site they occupy was sixteen years ago a bare field. These Conifers are gratifying proof of what can be effected by solicitous care and well-directed skill. They are Mr. Bass's pride, and well may he be proud of them.

We next enter the walled garden, and find fruit trees of pyramids, bushes, and espaliers in superior health, their forms and fine fruit-bearing condition bespeaking them at once to be under a master's eye and hand. In order to have the outdoor fruits as perfect as possible Mr. Bass sent his gardener to take lessons from the Rev. C. C. Ellison of Bracebridge; and the result has been very gratifying, the gardener having proved himself an apt pupil of an able tutor.

We find also some glass structures. The small span-roofed plant house had Fuchsias trained up the rafters after the manner of Vines—a mode which shows the pendant blooms to the greatest advantage, and which is worthy of more general adoption. The Fuchsia rods are trained and pruned precisely similar to Vines. The plants in the house (Roses, Ferns, Camellias, &c.) were all looking well. But I cannot linger here, and pass to the vineries—small again—not the Grapes, but the houses. The Vines are in the first order of health, and produce splendid Grapes, fruit of a quality worthy of the table of a prince. These Vines reflect the greatest credit on the gardener, Mr. Deaville, who was trained at Trentham. The borders were made and the Vines planted under the personal superintendence of Mr. Pearson of Chilwell about eight years ago. The sorts comprise Black Hamburgh, Mrs. Pince's Black Muscat, Alicante, Muscat Hamburgh, and Frankenthal; one Vine of Muscat of Alexandria having a small house to itself. At the time of my visit the fruit was out—the best having been distributed amongst friends, the remainder hanging in the fruit room. The crop was seen growing by Mr. Henderson of Cole Orton and other well-known good judges, including Dr. Hogg, and was by them pronounced most superior. To the excellent border made by Mr. Pearson, and to the skill and vigilance of his gardener, Mr. Bass attributes the admirable state of his Vines.

I now arrive at the main object of my visit—the orchard house. I had heard of this house and seen some of its fruit—fruit which was pronounced of the highest excellence by the highest authority of the generation. This house and trees I thought worthy a visit—a visit to be remembered. Sir Tomman Moseley had kindly placed a conveyance at my disposal, deputed his gardener as coachman, but so bitterly wintry was the day—ice below and a drifting blinding snow filling the air, that we had "mercy on the beast," stabled the horse at Burton, and "faced the storm" on foot. It was a cold journey, but we had a warm welcome. Why? Because we were gardeners, and because Mr.—yes, and Mrs., Bass were, and are, gardeners too. Unfortunately Mr. Bass was confined to his room by illness, but he kept up a constant communication with his unseen guests by sending down first one fruit and then another,

with pleasant words that we should test their qualities—such Nonpareils and Calville Blanche Apples which only high orchard-house culture could produce.

The orchard house is a span-roofed structure 60 feet in length by 20 feet in width. It contains a principal central border, also side borders. The principal border is occupied by standard Peach and Nectarine trees planted out; and arranged beneath them are dwarfier trees in pots. The side borders are occupied by trees in pots of Plums, Cherries, Apples, &c. The principal Peach trees are large-sized, symmetrical trees, each producing five to eight dozen of fruit. They have been skilfully managed, and literally bristle to their centres with fruit-bearing spurs. The sorts are Grosse Mignonne, Royal George, Noblesse, and Bellegarde Peaches, and Pitmaston Orange and Lord Napier Nectarines—an admirable selection, and probably not to be equalled by any other half-a-dozen sorts. The fruit from these trees is of the highest excellence. Black Hamburg and Royal Muscadine Grapes are grown in this house, and Mr. Bass considers that they are quite as good or better in flavour than those grown with more pretence and expense.

The Apples in pots comprise Margil, Calville Blanche, Cox's Orange Pippin, Ribston Pippin, and Nonpareil. Respecting the fruit from these trees it is not too much to say that those who have not tasted it, or other fruit similarly grown, have yet to learn the full value of these sterling sorts. Both in appearance and flavour Apples from well-grown orchard house trees far surpass the best specimens under even favourable garden culture. All the trees in this house are in the first condition of health and fruitfulness, and they are in the sole charge of Mr. and Mrs. Bass, who train, prune, pinch, and water them. The orchard house is their recreation ground—their "hobby;" their pleasure is to grow and give—a delightful, wholesome, healthy life. Mrs. Bass is a pomologist who can hold refreshing converse on the subject which she practises so successfully. The modes of pruning and pinching of the fruit of English and continental growers are familiar to her "as a tale of love." Her work is indeed a work of love—love guided by skill and crowned with success. It is refreshing to notice how much pleasure a garden can give and what benefits it can confer; and especially is it pleasant to feel that these pleasures and benefits are at the call of all who own a garden, however small it may be, if they only put "their heart in the work" of tending it.

My visit to Moat Bank was on one of the coldest of days of my garden "exploring" experience, but I was rewarded with the "discovery" of one of the warmest welcomes I ever met, and a garden which by the soundness of its management is worthy of a warm tribute of recognition.—J. W.

THE FLOWERING OF SPRING PLANTS.*

THE observations which have been made by Mr. McNab on the flowering of spring plants in the open air in the Edinburgh Royal Botanic Garden during the past twenty-six years, have been published in the Transactions of the Botanical Society of Edinburgh. These observations have been made by the same observer on the same plants growing in the same situations during the whole of the twenty-six years.

The average day of flowering of thirty-two spring flowers has been determined, of which the following are examples:—*Galanthus nivalis*, Jan. 25; *Eranthis hyemalis*, Jan. 30; *Hepatica triloba*, Jan. 31; *Corylus Avellana*, Feb. 2; *Rhododendron atrovirens*, Feb. 8; *Crocus susianus*, Feb. 4; *Leucojum vernum*, Feb. 10; *Daphne Mezereum*, Feb. 22; *Narcissus pumilus*, March 10; *Orobis vernus*, March 11; *Muscari botryoides*, March 18; *Ribes sanguineum*, March 22; *Narcissus pseudo-Narcissus*, March 31; and *Fritillaria imperialis*, April 1.

The lateness or earliness of the different springs, as determined from the times of flowering of the thirty-two plants in each year, is considerable. The latest spring was 1855, which was thirty days later than the average, and the earliest 1874, which was twenty-three days earlier, thus giving a difference of fifty-three days between the latest and earliest springs during the past twenty-six years. As regards particular flowers the deviations are much greater; the largest deviations from the average dates of flowering occur before the time of the

equinox, when deviations of from five to seven weeks either way are of repeated occurrence; but after the equinox the deviations are markedly less, seldom reaching three weeks.

The springs of 1855, 1856, 1857, 1865, and 1870 were late throughout; and on the other hand, the springs of 1851, 1862, 1863, 1868, 1869, 1872, and 1874 were early throughout. Great variations have occurred in other springs, such as 1864, which, being preceded by a very mild December, many spring plants came into flower in the end of 1863. But in January the temperature was 2° 0 under the average, and in February 5° 2, and vegetation was consequently arrested. March was also under the average, and the weather did not improve till April 3, the mean temperature of this month being 1° 7 above the average. The disturbing influence of this abnormal weather on the dates of flowering was in some cases very great. Thus, *Sisyrinchium grandiflorum* flowers on the average eleven days earlier than *Daphne Mezereum*, but in 1864 *Daphne Mezereum* did not come into flower till eighty-six days after *Sisyrinchium grandiflorum* had flowered. It is the occurrence of these disturbances which render a long series of years necessary in order to arrive at a sufficiently close approximation to the true mean dates of flowering.

As regards Edinburgh, January 11 may be considered as the turning point in the winter temperature, since previous to this date the temperature is, on the whole, falling, and after this date it continues steadily to rise. Further, after this date the rainfall becomes less, clear weather is of more frequent occurrence, and the increase in the temperature is very largely due to an increase of sunshine. The extremely slow rate at which, up to the end of February, the mean temperature rises, and the small differences among the temperatures up to this date, and the large number of plants—fourteen in all out of thirty-two—which come successively into flower during the interval, suggests that it is not so much absolute temperature that calls for consideration as the accumulated amounts of the preceding daily temperatures, in the extent to which these rise above freezing. The accumulated temperatures, thus calculated, are—for *Galanthus nivalis*, 73° 7, and *G. plicatus*, 146° 4; for *Crocus susianus*, 125° 2, and *C. vernus*, 179° 1; for *Rhododendron atrovirens*, 120° 3, and *R. Nobleianum*, 249° 3; and for *Narcissus pumilus*, 347° 0, and *N. pseudo-Narcissus*, 540° 1. Similar data prepared for other places, in this and other countries, would be very instructive in showing how far the order of dates of flowering in Edinburgh is observed in other places, and what is the relation of the dates of flowering at each place to the accumulated temperatures at that place, and what modifications are brought about by purely climatic differences, particularly as these occasion different results as respects the heating and actinic rays of the sun.

The thirty-two plants, whose dates of flowering have been determined, include three varieties of one species—viz., the blue, white, and red varieties of *Scilla bifolia*. Of these three varieties the blue flowers first—viz., on March 7; next comes the white variety, on March 17; and lastly, the red variety, on March 21; the red being thus a fortnight later than the blue variety.

An interesting question may in this connection be raised with reference to the relation which the colours of flowers have to the dates of flowering. With this view, our British wild plants have been grouped according to the different colours of their flowers and the months in which the flowers usually first expand, the data being taken from Dr. Hooker's "Students' Flora of the British Islands." In classifying the plants, red includes pink, crimson and scarlet; and green, all greenish-white, yellowish-green, and greenish-purple flowers. Grasses, Carices, and other groups, characterised by inconspicuous floral envelopes, are excluded. The list examined includes 909 species, of which there are 257 with white flowers, 238 with yellow flowers, these two being nearly a half of the whole number; then follow red, 144; purple, 94; blue, 87; green, 51; and miscellaneous, 88. Taking each colour by itself, and calculating the per-centages of that colour which has come into flower by each month from April to July, we obtain the following results for the first five classes:—

	April.	May.	June.	July.		April.	May.	June.	July.
Blue	18	43	71	95	Yellow	9	24	61	98
White	14	38	70	97	Red	9	25	63	94
Purple	4	28	61	93					

Thus of these colours, the blues are, on the average, considerably the earliest in flowering; then follow in order the whites and the purples, and lastly, the yellows and reds. It follows that the plants included in the British flora clearly

* Abstract of a paper read before the Edinburgh Botanical Society on the 18th ult. The paper itself is in type for the Journal of the Scottish Meteorological Society.

tend to arrange themselves, as regards the dates of flowering, in the order of the colours of the spectrum, the average earliest being those which are nearest the part of the spectrum where the actinic rays are at the maximum. It will be observed that the differently-coloured varieties of *Scilla bifolia* are in the same order of flowering of the plants of the same colours in the British flora.—ALEXANDER BUCHAN.—(Nature.)

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

Our first sowing of *Peas* are through the ground, and only require mild weather to progress favourably. We have made another sowing, and this time Fillbasket and G. F. Wilson have been put in with the early sorts. These will come in when Alpha, Dr. Hogg, &c., are over. It is a good plan to sow *Peas*, and also Beans, thickly in shallow boxes, where they can be started in a little heat, and gradually inured to the cold before planting them out. The young plants must be carefully transferred from the boxes to the open ground, for if they are planted in a careless manner, or without being inured to the cold, they will not do so well as those sown in the open ground. In sowing the *Peas* out of doors at this early season a deep drill is drawn, which is only partially filled up, a ridge of soil being left on each side. These slight ridges about 8 inches high shelter the young *Pea* plants from cutting frosty winds; and as the plants advance in growth the sides are filled in, which is preferable to earthing the rows up, especially in dry soils. In very wet districts this might not be an advantage.

The middle of the month will be a good time to plant out early *Potatoes*. A common practice is to plant with a dibber after the ground has been manured and dug. Others draw drills about 6 inches deep with a hoe, in which to plant. Our practice is to plant as the ground is dug, using a line to cut out the space for the tubers. This is quite as expeditious as any of the other methods, and treading upon the ground afterwards is avoided.

When the weather is favourable the hoe is kept at work amongst growing crops; we are also digging-in the manure that had been spread on the fruit-tree borders. The early Cabbages must be earthed-up. The Cauliflower plants in boxes have been placed in a sheltered position out of doors. They will be planted out if the weather continues favourable. Some seeds of Early London and Walcheren have been sown in a hot-bed to succeed the autumn sown plants. We do not allow the young plants to remain longer in the heat than to develop the seed leaves. The boxes are then placed in a cool frame, and the plants are pricked out in a few days after hardening. Lettuce, Radishes, Mustard and Cress, and Chervil, for use in the kitchen, and other salad crops, are now sown out of doors. Roots of Mint and Tarragon must also be lifted, and a few pots of them placed in heat.

PINE HOUSES.

There is nothing being done in these houses different from what has been stated in a previous number. As the days lengthen a slightly higher temperature has been kept up with more moisture in the house, and water in the evaporating troughs. The days have been sunny, which allowed of 70° at night when the nights were not cold; if dull weather, with frost outside, should set in, 65° is quite high enough in any of the houses. We have cut ripe fruit this week, and others are in various stages of ripeness, and there are plenty of plants that will throw up fruit during the next six weeks, so that a succession is ensured. Soil has been prepared for succession plants and suckers. Our light sandy soil is not well adapted for Pine-growing, and it is necessary to obtain clayey loam from a distance; but the dealers will not cut the surface spit so shallow as we do. They seem to dig it out, and very little turfy material is obtained in a cartload. By mixing this top spit with our own turf cut thin from grass land, a good compost is obtained. We mix as follows: Five barrowloads of loam to one of rotted manure, and to every barrowload of the compost is added an 8-inch pot of crushed bones, and as much charcoal broken into pieces as large as pigeon's eggs. This compost is best mixed two or three months before using it, and should be used in a moderately dry state. A wooden rammer is used to make the compost pretty firm in potting.

PLANT STOVE AND ORCHID HOUSES.

Many plants in the stove are now starting into active growth. We are potting those hardwooded plants that require it. Specimen plants are carefully looked over for mealy bug, for if this pest should gain a lodgment on such plants as *Ixoras* or *Stephanotis* it will sadly disfigure the flower trusses. The young growing wood of *Dipladenias* must be trained to fine string run up and across the rafters, one end of the string being fastened to the trellis to which the plant has been trained. The growths are trained near the glass until the flowers are formed, when

the strings are cut and the young growths carefully trained round the trellis. *Stephanotis floribunda* is also grown in this way, except that the young growths are made the previous season, and well ripened by exposure to the sun. The large specimen plants shown at the metropolitan exhibitions are managed in this way. The plants would not be nearly so well furnished with flowers if the growths were tied down to the trellis as they are made.

Palms that are in small pots for the size of the plants will be potted at once; larger plants that are not suffering will be potted later, say about the middle or towards the end of April. Ferns should not be allowed to become pot-bound if it is intended to make fine specimens of them. Plants that have received a check seldom make handsome specimens. *Adiantums* should be placed in the sunniest part of the house, and they like more turfy loam in the compost than some of the others. The Australian tree Ferns, although they may be wintered in the greenhouse, and will produce new fronds there during the summer months, succeed better if they are now removed to a house with a night temperature of 55°, and where they can be well supplied with atmospheric moisture. They should also be repotted before the young fronds are thrown-up.

We shall also repot many of the *Orobids* as time permits; a large proportion of them are best shifted at the time they start into growth. It is of the greatest importance to drain the pots well, using clean crocks; the pots used should also be quite clean. A very large proportion of *Dendrobiums* do best in baskets where they can be hung up close to the glass roof. If wooden baskets are used, the best material to make them of is teak; but those made of potteryware, and recently advertised in these columns, are durable, and equally well adapted for the plants. If it is thought better not to repot or rebasket some of the plants, a little fresh sphagnum and fibrous peat should be placed on the surface of the pots or worked into the sides.

FLOWER GARDEN.

We have pruned a portion of the *Roses*, the others will be left until the end of the month, or later, to insure a succession of bloom. A month hence will be time enough to dig-in the surface-dressing; this we generally do for the sake of neatness. If it is necessary to water when the hot weather sets in, a fresh dressing of rotted manure may be applied. A mistake is often made in pruning, and that is to leave too much young wood and not to cut it back enough. The shoots in the centre of the tree should be well thinned-out, all the very weakly and gross growths to be removed, leaving only those of moderate growth. The knife should not be used at random, but the shoots should be cut at an outside eye; if the cut is made at an inside eye the growth will be thrown into the centre of the tree, and still further tend to crowd it. Budded *Roses* that have made only one season's growth should be cut back to three or four eyes. Weakly growing Hybrid *Perpetuals* should be cut to 2 or 3 inches, while those of the most robust growth may have a foot or more of the young wood left.

Phloxes are now pushing strongly in the open ground. The cuttings have been put in—one in the centre of a small pot. They may be potted three or four in a 60 sized pot, and repotted singly into 60's after the cuttings are rooted; but the other system saves trouble, and as the pots are placed in a gentle hot-bed the cuttings very soon strike root; not 5 per cent. fail.

Beds of *Pinks* have been stirred up a little on the surface, and the plants made firm in the beds by pressing around the roots with the fingers. *Carnations* and *Piotees* in pots in cold frames ought to be looked over and have any decayed leaves removed, and the surface of the soil just stirred up with a label. We have not yet had time to do ours, but the plants are exceedingly healthy.

Auriculas have all been looked over. A few have been repotted, and the remainder surface-dressed; a little of the old mould is removed, and some material composed of about equal parts loam and cow manure put on to replace it. All superfluous offsets are removed at this time and placed in small pots. Any plants of a scarce sort, especially if the plants are tall, should be headed-over a little above the surface of the ground. The top will strike out roots readily in a short time if it is covered with a bell-glass and not overwatered. The bell-glass should be removed occasionally and wiped with a dry cloth.

We were able to obtain late in 1874 a very small plant of Taylor's Glory, one of the scarce varieties. It gave no increase up till April last year, when it was not much larger than it was when purchased. Risking all on one venture the top was cut off, and made a nice plant the same season. Offsets soon formed from the old stool, and from that one little plant of Glory nine plants have been raised; some of them are still very small, but they have lived through the winter, and are all starting into growth. We cannot always expect a hit like this, but if a plant of any scarce sort refuses to throw offsets with us, its head is struck off. Mrs. Sturrock and Meteor Flag gave one offset each only, but that is two plants instead of one. With care there is not much fear of losing the top. The weather is

severe, and the lights have been kept over the plants, admitting a little air at the back.

We also continue to pot-off Zonal Pelargoniums, and to place Verbenas, Ageratums, &c., in shallow boxes. Cuttings of Verbenas, and any other plants of which the stock is not sufficient, are put into heat. Early spring-struck cuttings of such plants are better for bedding-out than the old plants.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

LEEDS (Spring Show). March 15th and 16th. Mr. G. Forbes, 108, Hyde Park Road, Sec.

BRIEFOL (Spring Show). March 22nd and 23rd. Mr. G. Wobley, Holm Wood, Westbury-upon-Trym, Hon. Sec.

ROYAL CALIFORNIAN HORTICULTURAL SOCIETY. Shows April 5th, July 5th, and September 18th.

WESTMINSTER AQUARIUM. April 19th and 18th, May 10th and 11th, [May 30th and 31st, July 5th and 6th, October 4th and 5th.]

TYBERTON. May 24th and 25th. Messrs. A. Payne and J. Mills, Hon. Secs.

SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fridge, 89, York Street, Sec.

MAIDSTONE (Roses). June 21st. Mr. Hubert Bensted, Rocketow, Maidstone, Sec.

SPALDING. June 21st. Mr. G. Kingston, Sec.

RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.

SOUTHPORT. July 6th, 7th, and 8th. Mr. E. Martin, Sec.

HELENSBURGH (Roses). July 12th and 13th. Mr. J. Mitchell, Sec.

BRIGHOUSE. July 29th. Messrs. C. Jessop & E. Rawnsley, Hon. Secs.

PRESTON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.

SEATON BURN. August 26th. Mr. R. Richardson and Mr. W. Elliott, Secs.

DUNDEE (International). September 7th, 8th, and 9th. Mr. W. R. McKelvie, 95, Euclid Crescent, Sec.

TRADE CATALOGUES RECEIVED.

Stephen Brown, Weston-super-Mare.—*Illustrated Seed Catalogue and List of Bulbs for Spring Planting.*

Kelway & Son, Langport, Somersetshire.—*Spring Seed Catalogue and Amateurs' Guide.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

NEW CLIMBING MELON (H. B. B.).—We do not know to which Melon you refer. You must be more explicit.

ROYAL HORTICULTURAL SOCIETY (J. T.).—The address, "Secretary, Royal Horticultural Society, South Kensington," is sufficient.

SHOWING ROSES (R. C.).—The Roses are best shown with leaves, but they must be leaves attached naturally to the sprays bearing the flowers. Leaves not belonging to the Rose exhibited are inadmissible.

HEATING A VINEY (L. D. E.).—To maintain the temperature "of 80° under all weathers" you will require 580 feet in the case of the thermometer being at zero, which is one of the many extremes that may be drawn from "all weathers." Every requirement of the Vine, however, will be met in your case by six rows of 4-inch piping the length of the house, including returns and a flow and return across one end, or about 120 feet including syphons.

INACHING VINES (Richard Walker).—The best time to do this is soon after growth is made, there being a few leaves on both stock and scion to appropriate the sap, and thereby lessen the liability of bleeding. The speediest union is effected when the growths of the current year are operated on, both stock and scion being soft and unripe. The earlier it is done the greater is the certainty of securing a good growth and its thorough ripening.

FLOWERING STOVE PLANTS (G. B. U.).—In addition to Stephanotes, Eucharis, Ixora, Fraxinacea, and Gardenia, the following are of easy culture:—Aphelandra aurantiaca Roellii, Bougainvillea glabra, Burchellia capensis, Centropogon Lucasii, Conoclinium lanthornum, Dalechampia Rozeana rosea, Eranthis pulchellum, Euphorbia jacobiniflora, Poinsettia pulcherrima major, Rondeletia speciosa major, Soutallaria Mocciniana, and Thysanocanthus rutilans. We add a few bulbous plants—Pancratium fragrans, Hippeastrum pardinum, Imantophyllum minutum, Gesnera exoniensis, Griffinia hystrix, and Ureolonia aurea. Anthurium Scherzerianum you must have if you have it not already, it being one of the very finest stove flowering plants.

CUPRESSUS LAWSONIANA BREVEA VIRIDIS (Villa Garden).—It is one of the most beautiful of Conifers for a small lawn, and you may plant it with confidence. It is hardy, of free growth, dense and conical in habit, and almost as green as a Laurel.

RABBITS AND TREES (A. Dumbell).—The rabbits must be destroyed, or excluded by 2 feet 6 inches wire netting, which we employ until the trees are considerably advanced, and even then many succumb to rabbits and hares.

It is remarkable the eagerness that rabbits exhibit in attacking recently introduced plants; even the kinds they usually do not attack they will nibble at for a considerable time after planting, whilst others of the same kind grown on the spot they will not interfere with. Plenty of food is no safeguard, we being surrounded by park land and rough young plantations, which give us no freedom from their ravages. We might have helped you to a selection of some shrubs which these animals do not greatly injure; but you appear to have planted.

DESTROYING MICE (Edward Fisher).—Arsenic will destroy the seed, and is besides dangerous to use. We moisten, in fact make wet, every kind of seed before sowing, and coat them with red lead, and neither birds nor mice interfere with them; rats even not caring to molest seeds well coated with the red lead. Set a number of figure-4 traps baited with cheese "crust," and keep a cat—not to be made a doll of. A good one is invaluable as a sear of birds and for mousing; ours being famous at catching crickets.

CINERARIAS "BLIND" (E. M. P.).—The state of the plants is a consequence of defective roof-action, or a result of deficient light and temperature. If the latter they will improve as the season advances. See reply to "J. S."

TRANSPLANTING FRUIT TREES (M. D.).—You may safely remove the trees now, carefully preventing their roots being dried in the course of removal, and the trees will grow as well as if they had been planted in November. Trees planted after the middle of November seldom make fresh roots until the spring. We have planted fruit trees with great success even when their buds were swelling; but the roots were not exposed to the air more than a few minutes.

CINERARIAS NOT FLOWERING (J. S.).—If your plants are healthy, and especially if their roots are in an active state, they will flower freely as the season advances. It is common at this period for the petals to be slow in their movements, and as a consequence plants have occasionally been hastily condemned. With patience and good culture, not allowing even a trace of insects, watering the plants regularly, and occasionally with weak liquid manure, they will eventually expend their flowers freely.

GARDENERS' APPRENTICESHIP (A.).—We think no advantage would result from binding the boy to his father. Let the parent give his son good instruction for a year or two, and then seek to place him in some other good garden, when his own skill and perseverance would meet with the reward of promotion.

PLANTS FOR CUT FLOWERS IN JUNE (A Subscriber).—White or light pink will only be admissible for wedding bouquets. A few that may be had in flower at that time are:—*Stove plants*: Cierodendron Balfourii, Gardenia radicans major, Ixora acuminata, Pentas kermesina, Stephanotis floribunda, and Eucharis amesiae. *Greenhouse plants*: Abutilon Boule de Neige, Apocynon distachyon (an aquatic), Orange, by retarding in a cool house, Dracophyllum gracile, Jasminum grandiflorum, Mandevilla suaveolens, Myrtles, Rhynchospermum jasmynoides, Azalea indica, var. Borsig, Comtesse de Ribemourt, Narcissiflora, Raphael, Criterion, and Milla. *Marie Lefebvre Pelargoniums*.—*Show*: Claribel, Countess, and Coronet. *French and English Spotted*: Emperor of Pelargoniums, Madame Mignon, and Fortanio. *Fancy*: Fanny Gair, Lady Dorothy Nevill, and Princess Teak. *Zonal Pelargoniums*: Delight and White Clipper. *Double*: Alice Crouse and Madame Lamole. *Ericas*: Exquisite, infata alba, jasmyniflora alba, reticulosa var. Bothwelliana, albo-tincta, hirsuta alba, and vesita alba. *Rhododendrons*: fragrans jasmyniflora, and Princess Alice. *Pinellas decussata*, P. Hendersonii alba, and P. spectabilis rosea. Hardy plants will be represented by Roses from walls, Mock Orange, Dentia crenata flore-pleno, Lilac, Narcissus, Pinks, Spiraea japonica, and many others.

CLIMBERS FOR COLD FRAMERY (J. Brown).—From the moisture and the shade that will be necessary for the Ferns we do not consider flowering climbers suitable, and we should cover the pillars with green and variegated Ivies, and Ficus repens. We name the following climbers for the roof:—Begonia capricornata, Caprifolium luteum, Lardizabala bitemata, Alseodendron revolutum, Bridelia spicata, Berberidopsis corallina, Ceanothus aureus grandiflorus, Crataegus pyracantha, Passiflora caerulea, Caprifolium brachypodium aureum reticulatum, Solanum jasmynoides, Lapergeria rosea would probably succeed, but we do not recommend any of them. Deciduous plants may be Clematises Albert Victor, Jackmanni, Henryi, and Glycine sinensis. Except the varieties of Ivy, especially the small-leaved, and Ficus repens, we think them inappropriate. Why not cover the pillars with Lygodium scandens, and shade the roof in summer?

SOWING HOLLY BERRIES (T. F.).—Sow them now or in March on the east border in the kitchen garden, but you might if the ground be valuable keep the berries for a year in a heap in the ground, and not sow them until this time twelve months. The seeds will not, if you sow now, germinate until the second year.

DAFFODILS NOT FLOWERING (R. S.).—The growth is probably too free. Restrict the pot room, and expose the plants fully to light after the growth is made. With the Lapergeria we think the case is different, it requiring more pot room and more liberal supplies of water. You, however, give us no particulars, and we cannot in the absence of those give definite advice. Our "Greenhouse Manual" would help you to their treatment, post free from our office for 10d. "Fairy rings" may be destroyed by making holes where they appear with a crowbar, and saturating the ground with lime-water, made at the rate of 12 lb. of quicklime to thirty gallons of water. It will be clear in forty-eight hours, and should then be applied.

SILICATE MANURE (H. M. Y.).—We cannot give you the information you need; but we can say that we never knew an instance in which it prevented the Potato disease.

LOW TEMPERATURES AT NIGHT (J. S.).—The remark does not call for any severe comment.

KILN DUST (J. S.).—Kiln dust is an excellent manure, much superior to spent hops for either Onions, Peas, or Potatoes. We have used it with great success with these and other crops.

NAMES OF FRUITS (J. D.).—C. Braddick's Nonpareil; 6, Scarlet Nonpareil; H, not known; 111, Cockle's Pippin; 1, not known; F, Thompson's. (Continued Subscriber).—1, probably Cobham; 2, Sturmer Pippin; 3, Golden Harvey. (L. Garnett).—The large Pear is Huxley's Prince of Wales. No. 1, very like Berré d'Arenberg. We do not know what else it can be. 2, Passe Colmar. This requires a warmer climate than yours to ripen it properly. Can you give us any account of the Greenwood Russet?

NAMES OF PLANTS (G. G.).—Justicia coccinea, Scarlet Justicia. (R. S.).—We cannot identify plants from their leaves only; we must see the flowers also.

POULTRY, BEE, AND PIGEON CHRONICLE.

OUR BREEDING PENS.

UNDOUBTEDLY February is a very important month to all poultry fanciers. In this month we have most of our choicest birds penned-up for breeding. We collect with pleasure every egg laid, and we set them and look for the broods from them as our strength for another year. Most certainly, then, this is a month of great importance to us all, and yet it is a time that is not sufficiently valued by many.

Some fanciers think that so long as they obtain the eggs and are able to sit them, in these times of scarcity of broody hens, all must be well; but it is not so, for very much depends, more than is generally supposed to be the case, upon the strength and condition of the breeding pens when the eggs are formed and laid.

We can all remember, many of us sorrowfully, the dire failure of the early 1875 chickentide; and although we are, of course, much at the mercy of the weather, still a few hints on the management of our breeding pens at this time will be, perhaps, acceptable.

It is all very well to collect the eggs regularly and keep them from the frost, to place them under good hens, and to keep them damp and sprinkled with water; but none of these remedies are of much use unless the hens which laid the eggs and the cocks with them in such breeding pens are active and in good condition.

We believe there is nothing so fatal to the chances of large and strong chickens as to continually show the stock birds. They cannot endure it, and in the heavier breeds more particularly, such as Dorkings, Cochins, and Brahmas, the less often the breeding birds, especially the cocks, are shown the better.

We have asked many of our great breeders, and we learn from nearly all that they have different birds for breeding from and exhibiting, and hence they obtain their early chickens so strong and fine. Mr. Sedgwick, we think, would not have his early Cochins so large and forward if he was to be exhibiting his stock birds all the winter. Of course this gentleman, to a great extent, makes the summer shows his *specialty*. Still, many can and do make all-the-year-round exhibiting, and breeding as well, work successfully. This requires, however, a large stock of birds and a large space.

It is, moreover, at the bottom of much disappointment in the egg-vending line, for the eggs laid by hens in a pen where the male bird is being, or has been, overshadowed, are consequently often clear. Consequently, in justice to an egg-buying public, the birds in the yards which are looked for to supply sittings of eggs for incubation should be strong and not weakened by over-work, however good they may have been or are for the exhibition pen.

Shows have for the next few weeks, to a great extent, ceased; still there are some about, and it is never too late to be forearmed, for we have known birds taken from a run for one show only made useless for two or three weeks' breeding.

Then as to the feeding. At this time birds need to be very plentifully supplied with good food. Because they are not destined for the show pen for the present their usual fare should not be lessened, it should rather be increased, for there is much more expected of the birds, and we must try to sustain them by good and generous diet. We think the hens also need extra food now, and that good. As a rule, we are no advocates for allowing birds to have pans of food ready to go to at pleasure in their pens, but we do not object to it at this time of year, so have pans of soft food generally in our runs. The birds, especially the cocks, seem mostly hungry, more so than at other times. Thus it would seem Nature points out that the male birds do require plenty of nourishment at this time, for it is quite unusual for cocks, as they now do, to leave their harems and feed quietly by themselves without even using those insinuating powers they would seem to have of calling their ladies to them.

We have had this point called to our attention by four or five friends within the past two or three weeks: and so it would seem that many have seen its importance, and are acting upon it. The breeding pens at this time should be well housed. They do not need artificially heated roosting places, but the birds want to be in a sound building, well walled and warm, and yet properly ventilated. Birds kept in exposed places and where the houses are open to winds, and cold, and damp, ought neither be expected to lay well nor to produce good chickens.

There is plenty of time to make the desirable arrangements if commenced without delay, and the more care and attention we pay to the stock birds in this and the next two months so much larger a per-centage of fertile eggs and strong chickens shall we have as our reward.—W.

GAME BANTAMS.

No fowls will afford more pleasure to the keeper than these little pets. The clear merry crow of the cock, his proud strut and readiness to defend himself against all attacks are a continual source of amusement; while the nimble little hen ever on the look-out and guarding her brood with the most unrelenting care, cannot but be admired by anyone who will watch the graceful movement of her stylish little form. Of the many varieties kept at different times, none have given more pleasure and satisfaction. On account of their diminutive size, many at once class them as a delicate variety. This is, however, an error, which a little time given to the rearing of them will soon dispel. From quite a limited number of old birds I have this season raised a large flock of very promising chicks, and my experience is that they are quite as hardy and require as little attention as most other varieties. They mature rapidly, and being good foragers the young soon say good-bye to the old hen and look out for themselves.

Game Bantams may be divided into four principal classes—Black-breasted, Brown-breasted, Duckwings, and Piles. White, Black and Wheaten are also reared, but the first four are chiefly bred and much superior to the others in all respects. My ground being limited, I have confined myself to but two of the varieties, Black-breasted Reds and Yellow Duckwings. As the great points to be attained in these varieties are style, hardness of feather, clearness and beauty of plumage, these properties should be carefully sought after in selecting your breeding pens. The cock should be neatly built, hard in feather, handsomely marked, and as small as possible. When speaking of size, I mean as he appears to the eye, not weight. A close hard-feathered bird often the very picture of symmetry and neatness, will sometimes weigh, by several ounces, more than another loose-feathered and apparently larger and less desirable one. A cock, however, if he be in good healthy condition, and is small to the eye, light in weight and of stylish build, is certainly a desirable bird. He should have a long head, slim, graceful neck, well-developed breast, finely tapered body, wings well tucked up, tail tightly closed and only slightly elevated, legs rather long, slender, and willow in colour. The hen should be small and gracefully built, long slim neck, compact body, wings well carried off, narrow tail, legs rather long, and matching in colour with the legs of the cock. The plumage should be bright, evenly pencilled, and as free from uneven spots on the wings as possible. The birds should be mated and placed in the pen early in March, but I would not advise setting any eggs before the beginning of April in this latitude. Early in the season nine eggs are plenty to give the hen, and later eleven or twelve.

Game Bantam hens make excellent mothers, but, when they cannot be spared, a lightly built Game hen is the best substitute. Moistened earth with a light covering of well-broken straw makes the best and is the most natural nest, while a good dredging of flowers of sulphur over the nest before setting the hen will keep it free from lice. In ordinary weather and with an attentive hen the chicks may be looked for on the nineteenth day, and if the hen is quiet leave the chicks with her until all are hatched. Nothing will strengthen the young brood and give them so good a start as the natural warmth of the mother. If the eggs are given to the hen so that the nineteenth day will end with the evening, the great majority of the brood will be found to come out during the night when all is quiet, and in most cases will be found to work well. Pen the hen on a dry piece of ground, in front of a good sod if possible, and where the morning sun will strike the coop. For the first few days give the chicks a mixture of hard-boiled eggs and fine bread crumbs well mixed. Feed them after, five or six times a day, but no more at a time than they will quickly pick up with a relish. After the first week a mixture of ground oats and middlings made with water into a crumbling mass will be found to be a good, substantial, and safe food for them. This food should be varied, however, by giving them every day some good sound wheat, and occasionally a very little cracked corn may be added.

Nothing are they more fond of than cooked meat chopped fine; but while a little will help to keep them in good heart, too much only tends to force them into that overgrowth which with Bantams is particularly to be avoided. When the chicks have free access to a good sod, and a patch of good earth to scratch in, all such articles as old mortar, cracked bone, ground oyster shells, &c., are not required. When, however, the ground is limited they may be used to advantage, and a little finely ground bone mixed with the soft food will greatly tend to strengthen the fast-growing chick.

When the chicks are five or six months old they and the old birds should be fed principally upon good sound wheat, now and then a little cracked corn, and in cold weather have the morning's meal of warm soft food. The scraps from the table are always in demand, but see when given that none is left after the meal to be trampled upon and become sour. The house for these little birds should have a warm exposure, and so built

that, while there is plenty of means for ventilation, it may in cold damp weather be so closed as to avoid any draught. A well-covered shed next to the house, if it can be built, will be found of great advantage in winter. With a pile of well-sifted dry ashes under it they will often be found there dusting and sunning themselves when the snow-covered ground has greatly contracted their available room.—CHAS. E. LONG.—(*American Fanciers' Journal*.)

[The above is a pleasantly written article, and will be useful to our American friends. The state in which the Game Bantam fancy among us, as it appears to me, as follows:—When they were new birds they pleased everyone except the steadfast fanciers of the old varieties. The entries at our shows were extremely large. This went on for some time; but, as in all fancies, a turn came. Thus at the last Bristol Show, the third largest in the kingdom, there were more Black Bantams shown than there were Game Bantams (Black-breasted and other Reds), and the Sebrights were nearly as numerous as the Game Bantams of any other variety. The class for Game Bantam cocks again was not very large. The winners in all the Game Bantam classes were good, but the classes generally not so good as formerly.]

It comes I think to this, that now Game Bantams have found their proper level and their right place. They are a beautiful variety, but at one time they threatened to extinguish all the other varieties. Sebrights have advanced. So have the Blacks, and I much wish that more Whites were shown, though they are looking up without doubt.

Next for a special word about Game Bantam cocks. A time will come when I hope all dubbing will be at an end. I am glad to see that a case has recently been brought before the magistrates in regard to the dubbing of the larger breed. Game Bantams being frequently ladies' pets, I think they might be shown "dubbed or not dubbed." This would be the thin end of the wedge, and it could be driven home by improved public opinion presently. Once let all Game cocks be dubbed and cockfighting is for ever done away with. Its kindred sports (sports indeed!), bull-baiting and badger-drawing, are no more, and the duellist and prizefighter are equally blackguards in the eyes of society, and both can be arrested and punished. We are now heartily ashamed of the cruelty of our forefathers, and may every trace of it be washed out, and one trace is dubbing.—WILTSHIRE RECTORY.]

PROFITABLE POULTRY-KEEPING.

In your last week's Journal, under the heading "Unprofitable Poultry-Keeping (?) " a correspondent gave a statement of the number of eggs he had in the year from his fowls, and what they cost in food, &c. He stated his profit on the year to be £5 odd, and he considered the result unsatisfactory. I am able to give what I hold to be profitable fowl-keeping.

Your correspondent began the year with twelve hens and two cocks. I commenced on February 1st, 1875, with nine hens (two were young pullets) and one cock—cross-breeds, some good some bad. On March 30th I had one more hen—a very poor Black Hamburgh. Enclosed I hand you the results obtained. My stock now for the most part consists of good birds—a mixture of Brahmas, Cochins, and Dorkings, having exchanged or bought in two good Brahma cocks. Having sold many of the eggs and consumed the remainder, killed some of the fowls and pullets for home use, and reckoned all at average market prices and carefully taken stock, I find the profit for the year to be as nearly £7 as possible. My gardener who is a lover of all live stock has had the entire management of my poultry. He feeds early in the morning with warm stimulating food, and thrice daily with Indian corn. The accounts I have carefully kept myself:—

1875.	Number of Eggs laid	1875.	Number of Eggs laid
February	55	October	100
March	183	November	199
April	182	December	220
May	183	1876.	
June	197	January	295
July	118		
August	198		1,779
September	64		

—W. W. WEBB, Longlands, Stourbridge.

READING PIGEON AND CAGE BIRD SHOW.

We expressed a hope last year that an annual treat might be in store for us in the Reading Pigeon and Cage Bird Show. It has come round again with February 1876. The Pigeon Show was decidedly a better one than last year, many classes having been added, and that of cage birds was at least as good, which is much to say. The arrangements were as before excellent, and the temperature charming (we fear the birds on their homeward journeys will not say the same of the external atmosphere), and so exactly were many of the specimens in the same

position that they occupied before, that we could hardly believe a year had elapsed since we saw them there. The same Parrot with long list of his sayings was towards one end of the Corn Exchange, and hard-by was the same Parrot still whistling "Merrily danced the Quaker's wife," as if he had never whistled it before. One Parrot in a voice of thrilling harshness perpetually shrieked "Fanny," and it was interesting to see how large a proportion of the fair sex among the crowd started responsive to the call. We were greatly struck by the generally fine condition of the more tender of the foreign birds. The aviaries of Mrs. Monk and of Mrs. Holmes were largely represented; they must, indeed, be a sight. We were specially struck with a lovely pair of Pekin Nightingales from the former, and with some sweet, tiny, "Zebra" Doves from the latter. The gorgeous foreign songsters by no means displaced our own British birds, of which there were seven particular classes, besides a large and most beautiful variety class, to which several extra prizes were awarded. The owner of a little Zebra-shell Parrot invited public attention in the catalogue to the fact, that "the bird never takes any water," and we could not help being a little amused at seeing an emphatic order on the cage that this element should not be offered it. We were once shown over a prison by an eccentric warder, who remarked, "The prisoners never take any wine." Upon our inquiring if it was ever offered them he replied, "Oh, dear, no, sir!" Perhaps the little Parrot would be no more averse to imbibing than some of the prisoners, if he had a chance. The Corn Exchange is a charming building for the Show, and well lighted. We were glad on the first afternoon to see it quite crowded.

Pigeons.—Jacobins.—The first-prize pair were excellent Reds, close in hood and good in chain. Second were Yellows; one of them a trifle long in beak, and neither very regular in hood; we suppose their colour attracted the Judge. We preferred the neat Red pair which were third and Mr. Baker's unnoticed pair. **Turbits.**—First were Silvers. This award was generally considered a mistake; the cock had a very suspiciously wanting peak, and the colour of their bars is poor. Second were very fine Reds, not an exact match in colour, but very good in head. Third Blacks, a capital cock unequally mated. We admired a young pair of Silvers shown by Mr. Salter. **Owls.**—First came a Silver pair, the cock good, but the hen very long in beak; the best judges seemed to think this award a mistake. Second were nice Blues, and third Silvers again. **Fantails.**—Mr. Baker carried off the three prizes with birds that are pretty well known now. First and third Whites, second Blues. This class was not equal to many in the Show. Mr. Cresswell showed a pair with very flat though somewhat broken tails. Magpies had two classes; we believe they are a *specialité* of the Oxford fanciers, and hence were particularly favoured by Reading neighbours. Both firsts went to Mr. Bulley of Magdalen College, Oxford. We hardly thought that his Blacks merited first honours, the hen being very "high cut;" but the Reds were a beautiful pair, as were Mr. Salter's second Yellows. In Barbs the three prizes went respectively to Blacks, Yellows, Blacks, all good. The Variety class was a large one. First were a beautiful little pair of foreign Owls. Two second prizes were awarded—viz., to Scandaroons and Black Archangels. We could not see the beauty of the latter; they certainly had the Archangel form, but that draws one's attention to the want of the lovely prismatic copper hues of the ordinary birds. Third were reddish Frillbacks. We certainly thought some Trumpeters and foreign Owls hardly dealt with.

NANTWICH SHOW OF POULTRY.

This was held on the 4th and 5th inst., when the following prizes were awarded:—

DORKINGS.—1, A. Darby. 2, W. H. King. 3, W. Copple. **COCHIN-CHINA.**—1, A. Darby. 2, H. Tomlinson. **BRAHMA POOTRA.**—1, S. Lloyd. 2, J. Pownall. 3, A. Bamford. **Light.**—1, T. E. B. Horsfall. **Hamburghs.**—1, W. Speckman. 2, Mrs. Smith. **Spangled.**—1, Cup and 2, Mrs. Pym. **Any OTHER BAKED.**—1, Messrs. Silvester. 2, A. Darby. 3, J. Powell. **SPANISH.**—1, S. L. Edwards. 2, F. Cooper. **GAME.**—1, Cup, Sadler and Watson. 2, T. Burgess. 3, G. Walters. **Cock.**—1, Cup, Sadler and Watson. 2, R. Ashley. **Black-breasted Reds.**—1, R. Ashley. 2, E. Winwood. **Brown-breasted Reds.**—1, Sadler and Watson. 2, R. Ashley. 3, J. Chesters. **Other than Black or Brown-breasted Reds.**—1, Cup, R. Ashley. 2, E. Winwood. 3, G. F. Ward. **Hens.**—1, J. Chesters. 2, G. F. Ward. 3, Sadler and Watson. **Pullets.**—1, Cup, T. Burgess. 2, S. L. Saxton. 3, Sadler and Watson. **Black-breasted Red.**—1, Cup, C. Hughes. 2, T. Hassall. 3, J. R. Pratt. **Brown-breasted Reds.**—1, Sadler and Watson. 2, R. Ashley. 3, T. Billington. **BANTAMS.**—1, Game, Black-breasted Reds. 2, T. H. Stretch. 3, T. Foulkes. 4, W. Griffiths. **Game, Brown-breasted Reds.**—1, J. Lees. 2, W. Baskerville. **Game, other than Black and Brown Reds.**—1, Messrs. Farrington. 2, R. J. Goodwin. 3, J. Goulden. **Other than Game.**—1, H. Ashton. 2 and 3, S. J. W. Lloyd. **GREENS.**—1, R. Beckett. **Pigeons.**—1, J. Chesters. 2, W. Yardley. **Dragoons.**—1, W. Yardley. 2, A. McKenzie. **Pouters.**—1, W. Yardley. 2, J. Chesters. 3, T. C. Troncher. **Nuns.**—1, W. Todd. 2, J. Hinde, jun. **Tumbler.**—1, R. White. 2, E. Lee. **Fantails.**—1 and 2, J. F. Lovelidge. **Jacobins.**—1, W. Yardley. 2, R. White. **Trumpeters.**—1, Cup, F. S. Barnard. 2, A. H. Holl. **Owls.**—1, W. Yardley. 2, E. Lee. **Turbits.**—1, R. E. Horsfall. 2, R. White. **Amateurs.**—1, W. Yardley. 2, T. H. Stretch. **Other than the foregoing.**—1, W. Yardley. 2, W. J. Warhurst. **Doves.**—1, Mrs. Hockenbuhl. 2, Miss Tomlinson. **Setting Class.**—1, E. J. Rowley. 2, J. W. Harding. **SINGING BIRDS.**—Canaries.—1, S. Williamson. **Buff**

Belgian.—1, S. Williamson. *Yellow Norwich*.—1, J. W. Nichol. 2, S. Williamson. *Bay Norwich*.—1 and 2, S. Williamson. *Other than the foregoing*.—1 and 2, S. Williamson. *Langstroth*.—1, E. Lloyd. 2, T. Garnett. *Goldfinch*.—1, S. Williamson. *Skylark*.—1, T. Hope. 2, A. Simmons. *Bullfinch*.—1, S. Williamson. *Selling Class*.—1 and 2, S. Williamson. *Barbiter*.—Long Ears.—1, H. W. Whittles. 2, W. T. Millett. *For weight*.—1, E. Lloyd.

PLURALITY OF QUEENS IN ONE HIVE.

LE FRÈRE RMAULD of Stauvelli, Algeria, has in *L'Apiculteur*, given an interesting account of the bees of Algeria, from which I extract and translate the following account of their queen-raising:—"The Algerian bees bring up an extraordinary number of queens at swarming time. I was much astonished when breaking-up the combs of a deserted hive at the great quantity of queen cells it contained. On one comb I counted thirty-eight, and five combs gave a total of 190, all sealed in that hive in March and April. All these cells were torn open at the bottom.

"There is yet another observation that very much surprised me. If anyone had told me I could not have believed it. All bee-keepers admit that two queens cannot rest in the same hive, that the piping of queens in their cradles determines the issue of the swarm, and that if the weather becomes unfavourable for many days the old queen destroys her rivals, which retards the swarming. Here is a fact to the contrary. On the 22nd of March I had a hive where the bees hung out very strongly; all the front of the hive was literally covered with them. On the 30th of the same month I determined to give a cap to that hive in order to excite the bees to work. Before touching the hive I listened and heard distinctly the piping of several queens. I then lifted the cover to replace it by one with apertures. In so uncovering the hive I found at the top of the combs three young queens already emerged. I left them, and put on the cap. That day the weather changed to wet and cold, and so continued until April 14th. Three days after in approaching that hive I heard the piping of three or four queens in the cap. Four days later the same piping made itself heard, and several others in the body of the hive, and five days yet later there were the same sounds, queens were therefore born all these twelve days.

"As the hive where these bees were hatched was half an hour's journey from my house I could not follow the observation. On the 14th of April the weather became fine, and we had on that day a dozen swarms issue, and when I revisited that hive all was quiet—the young queens had gone out with the swarm that stock had thrown. The brother who had the surveillance of that apiary had sent me the swarms without indicating which hives they came from."

It will be seen from the above that the season for bees occurs much earlier in Algeria than in Britain.—JOHN HUNTER, *Eaton Rise, Ealing*.

OUR LETTER BOX.

RUST SPOTS ON SPANISH FOWLS' FEATHERS (J. P. C.).—The rust spots are caused by their being picked by their fellows. The cure is to remove the bird until it is quite healed. Frequent applications of compound sulphur ointment will cure the scurf of the comb. It is common to all fowls to pick any apparently raw spot, and when they have made it bleed they will positively eat the bird. Stranger still, the bird will stand still to be eaten. When birds make a sore it is from a vitiated state of the body, causing unnatural appetite. The treatment for it is, first an active purgative and then cooling food. Lettuce is very good.

SUNFLOWER SEED GROWING (F. W.).—Sow in April in rows 18 inches apart, and thin the plants to 80 inches apart. The seed will be ripe about August, and is given to poultry whole.

EARLY QUEEN-BREEDING (Stoodley Pike).—The very best book on early queen-breeding of which we know is by an American author of the name of Langstroth, but its cost is 10s. Can any of our readers recommend any other? Messrs. Trübner & Co., we believe, would supply you with Langstroth's book.

FEEDING BEES (W. H. Atwood).—We presume that your six stocks, saved thus far out of twelve, are in straw hives. As you must have plenty of empty combs from your lost stocks at your disposal, we think the simplest way for you to feed will be by taking a large flat comb and carefully filling the cells on one side of it with a syrup made of dissolved sugar. Set this flat upon the bottom board of the hive you wish to feed any calm warm evening, and put the hive over it upon an oak. Take it away in a week, unless your bees are starving. In this case double the quantity will do, otherwise it is better to feed a little and often at this time of year. It will do no harm if you keep this up for a couple of months. Your bees will amply repay you for this trouble. If your hives are in wooden boxes you have only to make an hole of wood exactly the size of your box about an inch thick. On the whole we think this mode of feeding about the best of any of the systems which have been recommended.

MOULDY COMBS (Caroline).—Cut all the mouldy combs out of your hive as soon as you can conveniently. Keep both the hive and the board free from moisture in future, otherwise more combs will become mouldy.

HOW TO SELECT GOOD STOCKS (Wm. Talbot).—If you have courage enough to turn up hives and examine them internally, you may easily select three of the best out of the dozen of hives belonging to your friend. Go to his garden before the bees are astir, gently and quietly uncover all of them without disturbing the bees at all. Then gently lift (one by one) the hives off their

boards, and turn them up, so that you can see the bees sitting amongst the combs, and count the number of clusters or seams of them in each hive. If small hives have four seams each, about as large as a tennep saucer, they may be considered in pretty good condition as to population at this time of the year. The most populous hives now, other things being equal, are the best. In examining hives thus you will see at a glance whether their combs are old or young, and whether the hives are full of combs or not. Young are better than old black combs, and hives filled or nearly filled with combs are preferable to those half empty. You are not able to detect the disease of foul brood, even if it exists in any of the hives. If the hives are not nailed to their board the examination now suggested may be completed in six or seven minutes. Mark or put a stone on the flight boards of those you may deem the best. If the hives are fastened to their boards and cannot be turned up without first disturbing the bees, blow some smoke into the hives before you examine them. Honey stores, though of less importance than population, should not be forgotten in turning the hives up.

GALVANIZED IRON VATS (Miss H.).—These must not be used to hold cider. The white metal coating the iron is zinc, with which the acid of the cider would combine and form a salt probably poisonous.

METEOROLOGICAL OBSERVATIONS.

CANNON SQUARE, LONDON.

Lat. 51° 33' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.						Rain.
1876. Feb.	Baromet. at sea and Sea Level.	Hygromet- er.		Direction of Wind.	Temp. of Soil at ft.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
We. 2	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In- ches.	
Th. 3	30.164	48.0	41.9	E.N.E.	40.0	42.1	41.4	38.3	37.1	0.063	
Fri. 4	30.187	49.7	39.1	S.W.	39.5	48.0	33.3	70.4	39.0	0.063	
Sat. 5	30.180	35.9	35.9	N.W.	39.7	43.8	33.9	79.4	31.5	0.002	
Sun. 6	30.188	34.4	34.1	N.	37.6	40.6	31.8	75.8	19.6	0.011	
Mon. 7	30.184	35.2	33.1	N.	37.3	39.0	31.4	64.4	23.1	—	
Tu. 8	30.184	35.3	32.8	N.	37.1	39.1	32.1	59.1	21.3	—	
Means	30.016	36.8	35.6		38.3	42.2	33.9	67.9	21.2	0.159	

REMARKS.

2nd.—Rain in early morning, but fine before 10 A.M.; a bright beautiful sunny day, and a start light.
3rd.—White frost early; fine all day, at times bright, but not near so fine as its predecessor.
4th.—Fair all day, but windy and cold.
5th.—Snow in early morning, but fine by 10 A.M., and so continued all the day but windy and cold at night.
6th.—Fine morning, but a little snow at 1.30 P.M., at 5, and at 9 P.M.; moderately pleasant in the early afternoon.
7th.—Fair, but not bright in the morning; rather dull and cold all day.
8th.—White frost early; rather overcast all day, with frequent very slight falls of snow.

A somewhat wintery week; frequent falls of snow, but not of any depth, nor lying on the ground.—G. J. SIMONS.

COVENT GARDEN MARKET.—FEBRUARY 9.

A FAIR amount of business has been done during the week with no alteration in prices. A large arrival of St. Michael Pines is to hand in splendid condition, making the sale of English fruit very difficult. Kent Cobs are realising advanced prices.

FRUIT.

	s.	d.	u.	d.		s.	d.	u.	d.
Apples.....	dozen	1	0	0	Mulberries.....	lb.	0	0	0
Apricots.....	dozen	0	0	0	Nectarines.....	dozen	0	0	0
Cherries.....	lb.	0	0	0	Oranges.....	dozen	0	0	0
Chestnuts.....	bushel	12	0	0	Peaches.....	dozen	0	0	0
Currants.....	dozen	0	0	0	Pears, kitchen.....	dozen	0	0	0
Black.....	dozen	0	0	0	dessert.....	dozen	2	0	0
Figs.....	dozen	0	0	0	Pine Apples.....	lb.	2	0	0
Filberts.....	lb.	0	0	0	Plums.....	dozen	0	0	0
Cobs.....	lb.	0	0	0	Quinces.....	bushel	2	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	2	0	0	Strawberries.....	lb.	0	0	0
Lemons.....	dozen	1	0	0	Walnuts.....	bushel	4	0	0
Melons.....	each	1	0	0	ditto.....	dozen	1	0	0

VEGETABLES.

	s.	d.	u.	d.		s.	d.	u.	d.
Artichokes.....	dozen	0	0	0	Leeks.....	bunch	0	4	0
Asparagus.....	dozen	0	0	0	Mushrooms.....	pottle	1	0	0
Beans, Kidney.....	dozen	1	0	0	Mustard & Cress.....	pottle	0	2	0
Beet, Red.....	dozen	1	0	0	Onions.....	bushel	2	0	0
Broccoli.....	bunch	0	0	0	pickling.....	quart	0	0	0
Brussels Sprouts.....	dozen	1	0	0	Parsley.....	doz. bunches	2	0	0
Cabbage.....	dozen	1	0	0	Paranips.....	dozen	0	0	0
Carrots.....	bunch	0	0	0	Peas.....	quart	0	0	0
Cauliflowers.....	dozen	1	0	0	Potatoes.....	bushel	1	0	0
Celery.....	bunch	1	0	0	Kidney.....	do.	3	0	0
Coleworts.....	doz. bunches	2	0	0	New.....	lb.	1	0	0
Cucumbers.....	each	1	0	0	Radishes.....	doz. bunches	1	0	0
Endive.....	dozen	1	0	0	Rhubarb.....	bunch	0	0	0
Fennel.....	bunch	0	0	0	Salsify.....	bunch	0	0	0
Garlic.....	lb.	0	0	0	Scorzonera.....	bunch	1	0	0
Herbs.....	bunch	0	0	0	Seakale.....	basket	1	0	0
Horseradish.....	bunch	4	0	0	Spinalots.....	lb.	0	0	0
Lettuce.....	dozen	6	0	0	Spinach.....	bushel	4	0	0
French Cabbage.....	dozen	1	0	0	Tomatoes.....	dozen	2	0	0
					Turnips.....	bunch	6	0	0
					Vegetable Marrows.....	dozen	0	0	0

WEEKLY CALENDAR.

		FEBRUARY 17—22, 1876.		Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock before Sun.		Day of Year.	
Day of Month.	Day of Week.			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	m.	h.	m.		
17	Tu	Royal Society at 8.30 P.M.		46.6	30.6	38.6	7	18	5	15	9	8	9	37	23	14	18	48		
18	F	Royal Institution at 8 P.M.		46.3	31.1	38.3	7	11	5	17	8	16	10	5	23	14	18	49		
19	S			44.9	31.0	37.9	7	9	5	19	4	23	10	44	24	14	8	50		
20	Su	SHELAGHESMA.		45.5	30.7	38.1	7	7	5	21	5	16	11	37	25	14	2	51		
21	M	London Institution at 5 P.M.		46.7	32.8	39.5	7	5	5	23	5	57	0	42	26	18	55	52		
22	Tu	Royal Medical and Chirurgical Society at 8.30 P.M.		46.8	31.9	39.3	7	3	5	24	6	27	1	56	27	18	48	53		
23	W	Society of Arts at 8 P.M.		47.4	31.5	39.4	7	1	5	26	6	48	8	15	28	18	40	54		

From observations taken near London during forty-three years, the average day temperature of the week is 46.1°; and its night temperature 31.8°.

CAULIFLOWERS AND BROCCOLI.—No. 1.



BEWILDERING to many must be the array of names which would seem to be needed to satisfy the requirements and fancies of growers of these vegetables. The lists furnish names as numerous as are the weeks of the year. If the "sorts" would fall into profit naturally during each of the weeks they would be of great value, for sweet white heads are ever in demand.

I have had to supply Cauliflowers (including Broccoli) "all the year round" without any forcing appliances, and for seven years I have not been without a dish when it was wanted. To effect this I have relied on three sorts of Cauliflowers and four of Broccoli. Cauliflowers: Dwarf Mammoth (Improved Early Erfurt), Walcheren, and Veitch's Autumn Giant. Broccoli: Snow's Winter White, Adam's Early White, Knight's Protecting, and Cattell's Eclipse.

By sowing Cattell's Eclipse in June, and growing on a north border (or growing anywhere and laying the plants in a north border in November), heads have been produced until the middle of the following June. By sowing Dwarf Mammoth Cauliflower in August and protecting the plants on a south border, they have produced heads in June before the Broccoli on the opposite side of the garden have been beheaded. The Cauliflowers have united with the Broccoli in early summer—a point which should always be aimed at.

The Cauliflowers I have said are ready in June; they have continued until the middle of January; by that time Snow's Winter White Broccoli has always been ready for cutting. The Broccoli has again met the Cauliflower in winter, which is another point which we should always endeavour to accomplish.

Those two main points attained the rest is not difficult, except the summer is unusually hot and dry, when it is no easy matter to provide a late summer and autumn supply. That has occasionally been my greatest difficulty. I never could have succeeded without that heat-defying sort Veitch's Autumn Giant, which is one of the most valuable introductions of recent years.

Having mentioned the primary points to attain, I will now state how they have been attained. The first and last crops of Cauliflowers are especially important. Seed for the first crop has been sown in August, and the plants when large enough were planted 9 inches apart on a south border. As winter approached boards were affixed on their edges at the back and front of the border, and spare lights laid across and further covered as needed. In the spring every alternate row was removed and every alternate plant in the row remaining, leaving the plants at 18 inches apart. These were encouraged by a dressing of nitrate of soda or guano—preferring the former—and were thoroughly watered, and the ground heavily surface-dressed with manure. That always brought out the heads in June. But to make sure two sowings were always made in September, one about the 10th and

the other about the 20th, and the south-border plantation was always a large one—much larger, indeed, than required if every plant could be depended on; but they cannot, and the more uncertain the crop the greater must be the margin for emergencies.

That is where many fail; they do not provide for emergencies and the fickleness of seasons. "Plant more than you want" is my kitchen-garden motto, and especially where it can be done without robbing the ground. In the autumn ground is vacant, and it is easy to pull up surplus Cauliflower plants in spring in time for planting Potatoes, and nothing has been lost but half-a-day's work of dibbing-in the plants. That practice has always made sure of the first crop, and now for the last.

Good sowings of Dwarf Mammoth and Walcheren were made about the 20th and 30th of June—two sowings again, mind. When the plants were ready for planting the south border was clear; the early Potatoes had been taken up and the Pea haulm cleared off. The ground not being wanted, why not fill it with Cauliflowers? It has been filled. Some, in spite of every attention, will "button," but when once the autumn rains fall the plants grow like magic, and will just be in time to commence forming small heads in November—heads, however, to be killed if not protected. Here the advantage of a large plantation is again felt. Select the most promising plants, dig them up and lay them in closely in cold spare frames, water them and further protect from frost as needed. These plants will supply excellent small heads for two months. After the frames are filled, or, if there are none, lay the plants in a convenient place and cover them with leaves—autumn leaves. I have cut Cauliflowers in January from under a foot of leaves as fine as those from the frames—pure white heads 2 to 3 inches in diameter—just the sort for a gentleman's table. The great point in these two crops is to "plant more than you want," and if you have plenty of Cauliflowers when your neighbours have none, no one will find fault with your having occupied vacant ground in such a wholesale manner.

The first and last crop of Cauliflowers being disposed of, I now turn to the first and last crops of Broccoli—the crops between these requiring no special care. The first thing to do is to procure Snow's Winter White Broccoli true. There are many spurious stocks. Sow the seed in March thinly, so that the plants will grow sturdily, and transplant when large enough in an open airy place. It is essential that the plants have ample room to develop themselves, and they should not be closer together than 2½ by 3 feet. A short woody, not a long sappy, growth is the main point to secure, and the sooner and better this is done the earlier will be the produce.

It is a singular fact, and one which can only be arrived at by experience, that this valuable Broccoli will produce heads earlier when the plants are grown in a perfectly exposed place, such as an unwall'd garden, than they will if grown on the warm south border of a wall'd garden. I have repeatedly had plantations on both sites, and invariably in favour of those which had been exposed. These latter perfected a more woody growth than the

former, their stems matured sooner, and their heads formed earlier. When planted out early and grown thinly in an open place (if I had the choice I should select the middle of a fifty-acre field), the stems of the plants are short and easy to protect (if protection is necessary) by packing round them stubble or other strawey refuse, and these plants will never fail to produce heads in January, and not infrequently I have cut them before Christmas. In severe weather the heads must be protected by turning the foliage over them, enclosing also a handful of hay.—R. FISH'S PUPIL.

ROYAL HORTICULTURAL SOCIETY.

THE adjourned Annual General Meeting of this Society was held on Thursday afternoon in the Council Chamber, South Kensington. The Right Hon. Lord Aberdare, the President of the Society, occupied the chair. The proceedings were to a great extent characterised by the same want of harmony which has marked for some length of time the public meetings of the Society, and indeed at one stage of the business—during Lord Bury's remarks—the noise and interruptions threatened to put an end to the proceedings, and it may be said that only the firmness of the noble Chairman prevented the meeting from ending in confusion.

Amongst those of the Council present were the Hon. and Rev. J. T. Boscawen, Mr. H. Webb, Dr. Hogg, Mr. Haughton, Lord Alfred Churchill, Dr. Denny, Sir Trevor Lawrence, M.P., Col. Trevor Clarke, Mr. Kellock, Mr. Campion, &c. Amongst those of the general body of Fellows—of whom there was a good attendance—were Mr. Shirley Hibberd, Sir Alfred Slade, Bart., Sir Peter Pole, Lord Bury, Admiral Hornby, Mr. Grote, Mr. G. F. Wilson, Dr. Masters, Mr. Godson, General Scott, Mr. Guedalla, Mr. Smee, Mr. Pinches, Mr. Bateman, Mr. Edgar Bowring, &c.

The Annual Report, which was taken as read at the meeting of the previous Tuesday, was circulated through the room. [This Report was published in our last issue.]

The CHAIRMAN, in opening the business of the meeting, said—I think it only right that I should first of all explain our adjournment of this our annual meeting from last Tuesday until to-day. As you are aware it was imperative on the Council to call the meeting for the 8th in accordance with the bye-laws of the Society, but as on that date Her Majesty was announced to open Parliament in person, and as a full attendance of the Fellows could not be expected on such a day, we resolved merely to hold the meeting *pro forma* in order to adjourn over until to-day. An advertisement to this effect was inserted in the papers, and the meeting was held. I was not present myself, but I believe there was but a small attendance of Fellows. I will now explain what took place. The Council, in accordance with their public notice, wished merely to formally adjourn the meeting without transacting any business whatever; but some of the Fellows present maintained that in accordance with the Charter of the Society it was imperative on the meeting then convened—being, as it was in fact, they said, the Annual General Meeting—to proceed to the election of members of the Council in the place of those who had retired since the last special general meeting. This they actually did proceed to do, but I would ask you to understand that the members of the Council strongly protested against such a course being adopted, and what followed was done against their wishes and in the face of their opposition. They held that the adjourned meeting would be quite competent to transact the business set down in the ordinary course of events for Tuesday, but their objections were overruled by the majority of the meeting, and the election of members of Council was gone on with. The Report, however, was only taken as read, but was not adopted, and therefore it will be perfectly competent for this meeting to accept or reject it as you think fit. It is my business, then, as Chairman, to move the adoption of the Report. I regret very much indeed, in the present state of feeling amongst the Fellows, that it is impossible for me to enter at this time into the subject which no doubt interests you most—that is, I mean as to what has been done by the Council since our last meeting. As you are aware, a discussion took place at that time as to the alterations in the privileges of the Fellows which the Council considered necessary in order to place the Society on a firm basis as regarded the payment of our debt and the future income of our Society. We found so much opposition to the new privileges that it was at length agreed we should take back the rules and revise them as far as possible. This the Council consented to do, and a considerable alteration has been made; indeed, I may say that at another time I could venture to show that very important alterations for the benefit of the Fellows have been made in the new scale of privileges, but I cannot do so at present because of a certain circumstance which has occurred. Only yesterday a Fellow handed in a notice to the Council that he would move to-day a resolution, the effect of which will be, if it is successful, a vote of want of confidence

in the Council, or, in other words, we will be called upon to resign. Now, there is an excellent rule in Parliament which says that votes of non-confidence shall have precedence over every other question, and that no other business can be brought before the House until such vote has been disposed of, and I would submit to the meeting that on this occasion the same course should be adopted. It is useless, as you will see, for us to discuss the revised privileges or the future policy of the Society when we have a thing of this kind hanging over our heads. It will be quite time enough for us to talk of what we may or may not do in the future to forward the interests of this Society when the vote of the meeting is taken, and we find whether the majority of those present have confidence in the Council as at present constituted, or whether you are disposed to deprive us of the powers we now possess. I therefore hope it will be the pleasure of the meeting that priority shall be given to the resolution of which Mr. Hardcastle has given notice, so that we may at once proceed to the disposal of the business which has called us together [hear, hear].

MR. HARDCASTLE said he must confess it was with considerable surprise—after understanding from the notice which had been issued by the Council that the meeting of Tuesday last was merely to be a *pro forma* one—that he had been since informed that most important business had been transacted there. Several Fellows had been elected to the Council, and further that the Report had been carried [no, no].

The CHAIRMAN.—I think I gave it to be understood that the Report was not adopted; and as to the election of Fellows the meeting would have it so, although the members of the Council strongly protested against such a course. It is for this meeting to accept or reject the Report.

MR. HARDCASTLE would accept what the noble Chairman said regarding the Report. He agreed that any discussion on the privileges should be postponed until the opinion of the meeting was taken on his motion. He would now come to the question which he had to bring before them. The policy of the present Council up to that time—but not the policy which had been sent round a few weeks since—had been one of inclusion. It was the duty of the Council to secure for the inhabitants of that part of the metropolis all the enjoyment they could consistently with the policy of the Royal Horticultural Society; but their new policy was diametrically opposed to such a course. In fact, the scientific Fellows wished to get as much as they could out of the South Kensington Fellows, and give them as little as possible [hear]. The question then came, Were the Fellows to submit to such treatment? [no]. For his own part he would strenuously oppose a policy of the kind. He did not wish to express himself with any feeling against any member of the Council. He did not wish this to be an excited meeting, as many of their gatherings were; but he could not but condemn the policy they wished to force on the Society. He therefore intended to move that the Report should not be adopted, and that the present members of the Council should be called upon to resign. No doubt the Council had the best intentions, and had done the best they could, but they had adopted a very bad mode of raising the fortunes of the Society [hear]. Looking at the past history of the Royal Horticultural Society, it could at once be seen that it had from the earliest period been divided into two factions—the scientific horticulturists, or gardeners to use an older name, and the non-scientific horticulturists, or those who admired a pretty garden without being learned in the names of the plants or shrubs. Now they all knew very well that the Society could never support itself as a purely horticultural society, and the scientific or gardening portion had failed from the first to make the gardens a financial success. It had been so in the old days, when the Chiswick Fellows depended for a great portion of their income on the fêtes which they gave from time to time, and it was so at present in regard to their gardens at South Kensington. One thing, then, was very certain—if the horticulturists or gardeners were bent on carrying out their own objects without regard to the interests of the residents, or if the residents were bent on carrying out theirs, the Society would surely fall to the ground. A change of policy which would make the gardens a pleasant resort for those who resided in the neighbourhood could alone save the Society from absolute effacement. With reference to the proposed changes in their privileges he would say a few words. A gentleman who entered the Society as a twenty-guinea or forty-guinea Fellow paid his money for certain privileges, but after a little time he suddenly found a great portion of them cut off. What was he to do? An annual Fellow could leave the Society without sustaining any pecuniary loss, but if a life Fellow did so he forfeited what he had paid. Did they think if such a policy was adhered to that many would be found willing to join the Society? He thought not. He was just reminded that within the last year they had lost £1600 of income. Under such circumstances they must consider what was best to be done. He thought the only thing they could do was—he did not like to use the word “turn out” the Council, but he would say “reconstruct” it. If they did so what were they to do next? If he had a list of names to form a Council

prepared he might be told he wished to force these men down the throats of the Fellows, while if he had not a list they might feel inclined to say, "Why do you complain when you are not prepared to meet the difficulty?" So of two difficulties he would choose the lesser one, and in the event of their succeeding in the motion they would submit a list which he held in his hand. He would just say that in that list their present noble and able President was retained as the head of the Society, and several of the present Council would also be proposed for re-election. For his own part he was inclined to think that the scientific Fellows should be rather on the Committees of the Society, where their technical knowledge was required, than in a majority on the Council. In conclusion, he hoped that the resolution he was about to propose would be accepted by the meeting—"That the Council, including those members who were elected on Tuesday last, be requested to resign." [hear, hear, and no, no.]

Sir ALFRED SLADE was much surprised at what had taken place at the meeting on Tuesday. Why were not the Fellows informed that business would be transacted? How was it that Fellows had been elected and the Report read? He protested against—

The CHAIRMAN.—I have already explained the matter twice, and will if you like do so again for the third time. The meeting was called by the Council in order to adjourn until to-day. It was not their wish that any business should be transacted, and what the majority of the meeting insisted on doing was done in the face of their strong protest. Those who had so acted honestly believed, no doubt, that they were right in electing the Fellows, as they seemed to be under the impression that such election could only be conducted at that meeting.

SEVERAL FELLOWS.—We protest against Tuesday's meeting. Mr. PINCHES, who rose to second Mr. Hardcastle's motion, said he regretted very much what had taken place on Tuesday. He did not censure the Council, but rather those who had acted in such bad faith. With regard to those who had been elected to fill up the vacancies in the Council, he should have thought a sense of delicacy would have kept them from taking their seats until at least the present meeting would have expressed its opinion on the question.

The CHAIRMAN.—This meeting could not have prevented them taking their seats. In order to do that, seven days' notice against the election would have been necessary.

Mr. PINCHES would only leave it to their sense of delicacy. Had he been elected under such circumstances he certainly would not have sat at the Council board; but he would not put himself up as model of propriety for others to follow. In supporting Mr. Hardcastle's motion he did so for many reasons. The Society was in an infinitely worse position now than it was three years ago. Their faith had been shaken in Lord Bury's Council when they saw its repeated failures to effect a satisfactory solution of the grave difficulties in which the Society was placed, and therefore they had looked forward with hope to what the present Council might propose to do. But the Council had not been in office many weeks before the Fellows heard that the old process of disintegration was at work, and he had been informed that several gentlemen of high public character had lately left the Society altogether; while since their last general meeting two prominent members of the Council had resigned (Admiral Hornby and Mr. Grote). He took the position of Lord Aberdare as that of a Prime Minister trying to retrieve the fortunes of the country at the head of a coalition ministry. It had often been said that England had no faith in coalition cabinets, and for his own part he would confess to having very little in a coalition council [hear, hear]. The measures they proposed up to the present time could not keep the Society from inevitable ruin and decay. He considered there had been some sharp practice in regard to the new regulations. Sufficient time was not given for objections to be lodged against them. Were the new privileges accepted it was hard to see how the Fellows could be kept from seceding, or in what way the outside public would be attracted towards the Society. The twenty-guinea and forty-guinea Fellows were especially to be pitied, called on as they were to surrender a great portion of their privileges without getting anything in exchange. The shows had greatly diminished in value, and the gardens were in a state of chaos. He would admit that the Council had cut down the expenses, but it only reminded him of the story of the parsimonious owner of a horse, who, having in the ingenious exercise of his economy, brought the animal down to a corn a day, found himself without a horse just as he thought his experiment a success [laughter]. The Society would soon be, if such disastrous economy were pursued for any length of time, in the position of the horse-owner, and find themselves without a garden [hear, hear]. If the resolution before them was not carried the Society would die of inanition. He believed that Mr. Freake had proposed to build a school of music and hand it over to the Society, as well as lend them £5000 to help in clearing away their debt. Admiral Hornby had informed him of this, and he had considered it a very rosy prospect for the Society; but

he was afraid Mr. Freake would now be likely to withdraw his offer when he saw members of the Council resigning, believing, as no doubt he did when he made it, that the new Council would have been a permanent one. Perhaps it might be possible for Admiral Hornby to give them some explanation as to why he had thought it necessary to leave the Council. Was it that he found it impossible to get on with his colleagues, or did he find it necessary to mark his disapproval of the revised privileges by resigning? It was to be hoped that some plan of joint action would be found whereby all parties could unite for the common good. Were he asked for a scheme by which the fortunes of their Society might be redeemed, he confessed he would be in the same difficulty as the Council; but it was their business as the governing body to find a proper way out of their embarrassments. At the present time it was necessary that the Council should be called upon to resign, because they had altogether failed in their mission. Their privileges should be given back to the Fellows, and inducements held out to the residents round about to become members of the Society. What these inducements should be it was not his business to say, that should be left to the Council to determine. It was to be hoped a Council would be found which would work amicably together. In conclusion, he hoped that their President would remain at the head of affairs, because he (Mr. Pinches) had every confidence in the noble lord's ability to bring their difficulties to a successful issue, and he therefore hoped his lordship would be re-elected [hear, hear]. He had to complain of his name being printed in the Report as an auditor for the present year. He had withdrawn his name in consequence of finding that the accountants who usually kept their books had resigned their office.

The CHAIRMAN.—We found it impossible to strike out your name, as the notice was too short. The rule is to give seven days' notice.

Mr. PINCHES.—That may be; but some one else might have been found to take my place.

Mr. ALFRED SMEE rose as a gardener. He believed that until the Society obtained a new Charter they could never hope to work together as a "Royal" Society should. He would characterise the existing Charter as one of the worst and most impracticable documents that had ever been prepared in this country. Under it they could never prosper, but would continue to go on in the same idiotic way as at Tuesday's meeting. Another reason why they could not get on was that they had forgotten the original objects of the Society. He would ask, Did scientific societies usually mix themselves up with skating rinks? ["question," and cries of "time"]. One sure sign of their decay was that they did not publish any journal now. For his own part he did not care whether the South Kensington Gardens were built on or not. Who would care if his own private garden were destroyed? Why should the horticultural Fellows throughout the country be saddled with a garden which was ruining the Society? ["time"]. Let them consider that twenty thousand plants were annually consumed in the dreary wilderness appended to that building which was called in mockery a garden. He did not think if they put in any number of councils that they would be a bit the better for it [cries of "time" and "chair"].

The CHAIRMAN considered that Mr. Smees was quite in order.

Mr. SMEE then went on at some length to say that there were three parties in the Society to be consulted, and until they agreed to work amicably together the Society would go on from bad to worse.

The latter portion of his remarks were frequently interrupted by cries of "time" and "question," and the Chairman had again to interfere in order to get the speaker a hearing.

Sir PETER POLE agreed with Mr. Hardcastle's motion, but he would not say whether the Council were fit for their places or not. Several members of the Society had asked him to make some remarks regarding the new privileges; for instance, the ticket given to a four-guinea Fellow was not transferable.

The CHAIRMAN.—The ticket can be given to anyone.

Sir PETER POLE.—But suppose my daughter wishes to enter the gardens; she cannot do so on my ticket.

The CHAIRMAN.—There is nothing to prevent your daughter or anyone else from entering the gardens. She could come in as a nominee.

Sir PETER POLE said he maintained that under the new rules he could not lend his ticket to anyone, and such was the opinion of his friends [hear, hear].

The CHAIRMAN.—No doubt the power of transfer has been taken away, but you can meet the case by purchasing for £1 forty admissions [oh, oh]. Of course our whole policy is a restrictive one.

Lord Bury, who at this stage of the proceedings entered the room, then addressed the Chair as follows: I must apologise for my seeming discourtesy to the meeting in being so late, but I have only just left a meeting in the City. I think the gentleman who has just sat down has trailed a red herring across our path. I consider that the motion which has been put to the

meeting by Mr. Hardcastle should be kept before us, and that the subject should not be wandered away from. Now there is one preliminary thing which I would like to say, and about which I wish for information. How was it that business was transacted at the meeting on Tuesday last, when the Council announced that it would only be held *pro forma*? ["time"]. In honour no important business could have been transacted in the face of such an announcement. I am surprised —

The CHAIRMAN.—This has all been said by previous speakers. Lord BURY.—Then I must say it again [cries of "no" and "time"]. No business should have been — [Here several Fellows protested against Lord Bury taking up the time of the meeting in going over the same ground as previous speakers.]

The CHAIRMAN.—Surely this is not the question before the meeting. I must ask my noble friend whether this is keeping to the resolution.

Lord BURY.—I will protest against the proceedings of Tuesday last [cries of "time" and "divide"]. I will obey the ruling of my noble friend and keep to the resolution. I consider that the great reason why the Council should be called upon to resign arises from the proceedings of last Tuesday [continued cries of "time" and interruption].

The CHAIRMAN.—But as I have already explained several times before, what took place at the meeting on Tuesday was done in spite of the Council, and how could they prevent it?

Lord BURY on again essaying to address the meeting was met by shouts of "time" and "divide, divide," and general interruption.

Lord BURY [turning excitedly to the meeting].—You needn't halloo at me in that way! [Confusion.] Lord Bury continuing—I confess I am surprised to see Lord Alfred Churhill sitting among the Council. It would have been far more decent for him to have stayed away after the peculiar manner in which his lordship was elected to the Council on Tuesday [continued cries of "time" and "chair"].

The CHAIRMAN.—I would advise my noble friend to keep to the resolution.

Lord BURY.—If I am allowed to say two consecutive sentences you may understand what I have to say. I do not wish to say anything against my noble friend. I hope he will remain in office at the head of the Society [cries of "time."]. What I want to say is in condemnation of those members of the Council who allowed the election to take place on Tuesday last. I say that the fact of their allowing it was an indication of incompetency on their part ["oh!" and disturbance.] My noble friend has said he did not agree with the course pursued by the Council on that occasion [continued cries].

The CHAIRMAN.—I protest against this. I never said I disagreed with the Council. They did their best to keep faith with the public. I consider your lordship is not speaking to the resolution [disturbance].

Lord BURY.—I have been speaking to the resolution. Who put the resolution to the meeting, and why did he do so? The fact that the Council allowed the election on Tuesday was an indication of incompetency on their part.

The Hon. and Rev. J. T. BOSCAWEN explained that he had occupied the chair at the meeting referred to, and had no other alternative, according to the Charter, but to put the resolution proposed to the meeting [hear, hear, and no].

Lord BURY.—The fact of the Chairman submitting an informal resolution to the meeting is another reason why a vote of want of confidence should be carried [interruption]. The conduct of the Council since its election has been out of harmony with the interests of the Society. They have done nothing to extricate us from our difficulties [continued cries]. His lordship concluded by supporting the resolution.

Mr. SHIRLEY HIBBERD would let the meeting divide on the question by proposing an amendment. Mr. Hardcastle, who was about to retire from the Society, wanted to leave it in a state of revolution.

Mr. HARDCASTLE.—I did not say I would leave the Society.

Mr. S. HIBBERD.—The gentleman and his friends wished again to have the Society in a state of revolution. Why did they want to oust the present Council? Because, as the proposer of the resolution said, "they had done their best." In fact, that gentleman and his party did not know what they were about. They were rehearsing the performance of three years ago, but had forgotten their parts. Lord Bury and his friends were in a fog as regarded the actual financial position of the Society. The gardens, for which no one paid, always kept them in difficulties, and now they had £6000 of debts. The Council had tried to re-arrange the terms of fellowship, a course which was called for by public opinion and common sense [hear, and no]. For his own part he considered the revised privileges were a great deal too easy for the residents of South Kensington, they should be made to pay not less than ten guineas each yearly. The income of the Society had to be raised by some means or other, and the new scheme proposed by the Council should at least have a year's trial. It was monstrous that the gardens should be kept up for the amuse-

ment of the local Fellows at the expense of country Fellows. He objected altogether to the motion, which was brought forward for the purpose of again throwing the Society into an unsettled state [no, no, and hear, hear]. He would conclude by moving as an amendment, "That the ballot of Tuesday last be confirmed, and the Report adopted" [hear, hear, and dissent]. Mr. HARDCASTLE.—I submit that that is not an amendment to my resolution.

The CHAIRMAN.—Well, I hardly think it is, but it can be made an amendment by giving a direct negative to the motion. It will come to the same thing if the proposed amendment is altered to "that the words after 'that' be omitted," and the words, "the Report be adopted" substituted. I think that would meet all that is required.

Mr. HIBBERD accepted the alteration.

Admiral HORNEY.—May I be permitted, my lord, to answer the questions asked with reference to my retirement from the Council? Would my doing so be a breach of faith?

The CHAIRMAN.—It is for you to act on that point as you think proper. Of course you can only speak for yourself, and if your remarks are limited to that I do not see any harm in your explanation.

Admiral HORNEY then proceeded at some length to explain his resignation. He would say for himself that he had worked harmoniously with the Council, and there had been no quarrel between them. He should say, however, that after joining the Council he found himself in a false position and in a hopeless minority. He disapproved of much that had been done. For instance, he was opposed to the revised privileges which had been issued.

SEVERAL MEMBERS OF THE COUNCIL.—Why, you voted for them.

Admiral HORNEY said it was no secret that Lord Aberdare and himself protested against them. He believed the revised privileges could not be worked for the benefit of the Society; they were simply impracticable. Being of this opinion he had felt it his duty to resign, as also did Mr. Grote. They were altogether unable to do what they thought right, and so considered it best to retire.

Mr. GEORGE WILSON then seconded the amendment. They had had enough of turning out Councils. He would say, Pray do not make matters worse than they are by turning out the Council.

Mr. PETER LIGGINS would support the motion. One proof of the decay of the Society was the comparatively small attendance at the meeting that day. A few years ago the room would have been crowded by Fellows who wished to hear the President's statement. In order to show how the affairs of the Society were mismanaged he would bring a certain circumstance before the meeting. A lady, whose name it was unnecessary to mention, had written to the Council complaining of the revised code of privileges, and in reply received a letter from the Secretary accepting her resignation. Now, she had not tendered her resignation and had no intention of doing so.

A MEMBER OF THE COUNCIL said this was the first they had heard of the matter.

Mr. LIGGINS went on to say he could give the name. He brought the case forward to let them see how recklessly the income of the Society was thrown away [cries of "time" and "sit down"].

The CHAIRMAN said the Council knew nothing whatever about the letter or the lady. The last speaker must have been misinformed as to the facts.

Mr. EDGAR BOWRING, Treasurer to the Royal Commissioners, spoke as to the urgent necessity for a vigorous effort to be made in order to raise the income of the Society to £10,000 per annum, so as to meet the claims of Her Majesty's Commissioners.

Mr. GODSON wished to know how it was that the Council did not vote at Tuesday's meeting, and thus defeat the object of those who wished to force new members on the Council [cries of "divide"].

The CHAIRMAN thought it was unusual for the Council to vote.

Mr. GODSON said they could have done so [cries of "time," and "divide"].

The CHAIRMAN considered the Council could not have voted. In any case they were in a minority ["time"].

Mr. BATEMAN was opposed to the motion [continued cries]. It was wrong to be always changing their Council, and if the resolution was successful they would only be adding to the embarrassments of the Society [cries of "divide"].

The discussion closed at this point, the meeting evincing considerable impatience to have the vote on the resolution taken.

The CHAIRMAN.—It is now my duty to put the resolution and the amendment to the meeting, so that the question may be decided, but before doing so I would say a few words. Before my own fate or the fate of the Council I would consider the fate of the Society, and I would ask you to think what may be the result if the motion is successful, or even if it is not. Whether you are willing or unwilling that it should be so—and no doubt there are many present who are unwilling—the

fortunes of South Kensington and Chiswick' are united, and united they will remain unless you obtain a change in the Charter. Now, supposing this vote calling on the Council to resign is passed, I do not know what may be done. As you know the Council need not resign their seats unless they wish to do so, you cannot compel them to resign. Of course a Council acting after such a vote would have but little power, and would only be a Council in name. The only way a Council can be got rid of is to serve a notice of incapacity against each individual member seven days before the annual meeting. But I shall leave the Council to act as they think fit; I can only speak for myself, and cannot say how they may feel disposed to act. My opinion, however, is that whether they remain after an adverse vote, or whether they get a vote enabling them to remain, the difficulties of the Society will be immeasurably increased, and they will find their position far from being a pleasant one. If they do retire, the succeeding Council need not hope to have an unanimous constituency. Indeed, I am of opinion that the removal of the Council of 1873 brought on disunion and disorder [hear, hear]. It will not be until our large constituency agree to act together with unanimity that we can hope for any success in altering the position of the Society. For myself I am not afraid of any vote, and would be quite content to give up the onerous position I now hold, but I should be ashamed of myself did I think of leaving the Society in its present difficulties. Admiral Hornby has said that the Council was not unanimous on the question of the privileges; but I must say that when I was asked to join the Society in order to help in doing something to retrieve its fortunes, I was told that there was a strong spirit of self-sacrifice on the part of the Fellows, so that the desired end might be obtained. When, therefore, with the present Council I accepted office, I found it to be the almost unanimous opinion of my colleagues that the transferable tickets were the cause of much loss to the Society, and ought to be done away with. It is quite true that Admiral Hornby and myself would have preferred a modification commonly called a family ticket, but we were overruled, and bowed to the will of the majority. After the discussion at the last general meeting which took place on the new scale of privileges then submitted to the Fellows, Admiral Hornby and Mr. Grote were of opinion that some very important modification should be made in order to meet the views of the general body of the Society. It was, however, the decision of the majority that the general principles of the amended code of privileges should be retained, and the two gentlemen referred to consequently retired. I will now make a suggestion just as if I were in the body of the hall—simply as a Fellow, and not as your President. It is, that instead of declaring warfare between the Council and the Fellows, some attempt ought to be made to agree on some form of action which will command general consent. With that view I would further suggest that this meeting be adjourned, and that the list of members whom Mr. Hardcastle is about to propose as a new Council be formed into a committee, who can associate themselves with the Council, and endeavour to agree to an attempt being made to find a mode of harmonious action, so that we may all work altogether. I trust after throwing out these suggestions that the resolution will not be pressed. Already the half year's rent is due, and I confess we are rather anxious as to how the money is to be obtained. In the present unsettled state of our Society those who are inclined to lend money are almost afraid to do so, though of course they have the Commissioners to see to the repayment; and then, too, the February interest on the debentures is overdue. I am quite satisfied that a momentary triumph over the present Council will lead only to greater difficulties in the future. Let the meeting be adjourned, and a fresh series of propositions can be made from the Council to the Fellows. I make all these suggestions not on my account, because, for my own part, I should be very glad indeed were I relieved from my somewhat difficult position; but, as I have said before, I really do not wish to leave the Society in its difficulties. I earnestly trust that Mr. Hardcastle will not press his motion [applause].

Mr. HARDCASTLE would not consent to withdraw his motion. The key of their financial position was the increase of local Fellows. The policy of the Council was opposed to such an increase and would effectually prevent it. The vote of the meeting should be taken as to whether the present Council ought to remain in office or not. If they were successful it would be for the Fellows to say whether they should adjourn.

The CHAIRMAN.—Then it only remains for me to put the resolution. The amendment can be put as a substantive motion. Those for the motion could say Aye and hold up their hands.

His lordship then put Mr. Hardcastle's resolution to the meeting with the following result:—

For the motion	82
Against	45
Majority	18

The result was received with cheers.

Mr. GODSON moved the adjournment of the meeting.

The CHAIRMAN thought that his suggestions with regard to the appointment of a committee ought to be considered. Had Mr. Hardcastle left the room? Perhaps he would act on a committee.

Mr. HARDCASTLE having returned, said he should be happy to do anything he could for the good of the Society. He should have no objection to serve on a committee.

The CHAIRMAN.—Would Mr. Pinches join the committee?

Mr. PINCHES did not object. He should, however, like it to be understood that his name was not amongst the list held by Mr. Hardcastle.

A committee consisting of Mr. Hardcastle, Mr. Pinches, Mr. G. F. Wilson, Mr. C. J. Freaque, Mr. A. Grote, and the Hon. R. W. Chetwynd, was then appointed to confer with the Council on the state of affairs.

Mr. VITCH having moved the adjournment of the meeting to that day fortnight,

Mr. PINCHES proposed a vote of thanks to the noble Chairman for his able conduct in the chair, and the meeting then separated.

ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 16TH.

FRUIT COMMITTEE.—Henry Webb, Esq., in the chair. Mr. Potte, the Gardens, Sudbourne Hall, sent two varieties of Dandelion; that grown in France for salads, and the common English type, also the Barbe de Capucin or Chicory, and the variety sent to the last meeting named Witloof. Mr. Potte finds the above very useful for salads in the winter, and as shown by him at the meeting were very creditable productions, well deserving the cultural commendation conferred by the Committee.

Mr. Monro of Potter's Bar showed twelve fruits of his excellent winter Cucumber Duke of Edinburgh, for which he received a cultural commendation. The fruits were of good flavour and of a very useful size for a gentleman's table. A dish of Onions was sent from Mr. F. Bonnal, but was passed as being an ordinary stock of Brown Globe.

Harrison Weir, Esq., Weirleigh, sent a dish of a seedling Potato, King Harry, second early. It is a good variety of a prolific character, but was passed by the Committee. The same gentleman also sent a dish of Matthew's Eliza Pear, which proved to be Josephine de Malines; a good variety for the season. A cultural commendation was also voted to Mr. Weir for a dish of well-kept highly coloured Blenheim Pippin Apples, the finest which we have seen for some time.

Rev. George Kemp, Sevenoaks, Kent, sent a dish of Joly de Bonneau Pear. It was slightly astringent, but of a brisk aromatic flavour; it was thought to be a good late sort, but as exhibited did not merit special notice.

A dish of seedling Apples was sent by Mr. J. McLaren, Ash Vale. It was undistinguishable from Cellini, and was passed by the Committee. Messrs. Lucombe, Pince, & Co. of Exeter sent Apple Gidley's Pearmain, a seedling from Cornish Gilliflower, but not so good in flavour as that variety. A German Apple named Breßling was sent from Mr. Rivers; the fruit had a disagreeable flavour, owing perhaps to the way in which it had been preserved.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. Two noticeable groups of plants were exhibited at the meeting, and both were from the nursery of Messrs. Veitch & Sons. One was a collection of upwards of fifty hybrid Amaryllises, which in the aggregate had a gorgeous effect, and made more imposing perhaps by the juxtaposition of a collection of well-bloomed Cyclamens. Some of the Amaryllises were named, and first-class certificates were awarded to the following: Phoebe, dazzling flame scarlet, with a buff star, exceedingly vivid and fine; Junius, deep velvety crimson-scarlet and greenish-white star, very rich; Sultan, bright maroon and white, very rich, the petals also having an elegant reflex; Agatha, creamy star, scarlet petals edged with white; and Rev. J. Stainforth, crimson, with white centre and bands, an extra large flower and very fine. There were also many other exceedingly fine varieties. It is almost impossible to adequately describe the vivid colours of these plants; they are intensely rich, and the petals are of good substance. Some of the light varieties are also very chaste. This is probably the finest collection of Amaryllises (or Hippeastrums) that has ever been exhibited. The batch adds another honour to the great Chelsea firm, and the plants will be of immense value to decorators. The collection was highly commended by the Committee. They will be further alluded to, and cultural notes will be given by a successful grower.

The Cyclamens were remarkably healthy and well bloomed, the foliage of the plants being stout and distinctly marbled. The colours were varied, the darker having bright glossy petals, the lighter being mostly shaded and spotted, a few being pure. A vote of thanks was awarded to this collection.

Fransanthes elegans, a "cross between Farboria and Sonchus laciniatus," a standard Grass-like weeping plant, suitable for

table decoration, was exhibited by Mr. Green, Botanical Nursery, Holmesdale Road, Reigate. Mr. James, Castle Nursery, Lower Norwood, exhibited a plant with two blooms of a fine variety of *Dandrobium nobile*. *Peperomia marmorata Stevensii* was sent by Mr. Stevens, gardener to G. Simpson, Esq., Wray Park, Reigate—a small plant with acuminate leaves and nicely marbled foliage.

NOTES AND GLEANINGS.

A SMALL BAND OF HORTICULTURISTS, invited by Sir H. W. Peek, assemble fortnightly at the gardens of Wimbledon House, Surrey, for the purpose of discussing horticultural topics, the reading of essays, &c. This season they have gone on most satisfactorily, and a great number of subjects bearing on horticulture have been warmly discussed. Some of the essays are published, and these gatherings are looked forward to with more than ordinary interest. To Mr. Otterhead, Sir H. Peek's able gardener, great praise is due for the way Sir H. Peek's wishes are carried out, and for the warm and hearty welcome the visitors meet with; and to his exertions are due that within the past few days over forty gardeners have been added to the list of members of the village club and lecture hall. Prior to this the ordinary or working-class members only numbered twenty-two. These new members have issued a circular which has been headed by a subscription of £5 5s. from Sir H. Peek, and others are forthcoming, so that in a little time we hope this village club will have a library of useful standard horticultural works. The honorary members will, we hope, appreciate this effort made by these men, and drop in occasionally. The movement is, we think, a step in the right direction.

— MR. DON is about to leave the service of the ROYAL BOTANIC SOCIETY. The Society will not obtain another Superintendent more able or, in every qualification, his equal for their Superintendent.

— SOME CONTINENTAL HORTICULTURAL EXHIBITIONS of note are announced. An "International" is to be held at Rome from May 6th to 14th, the first of the kind held in the imperial city. A great Exhibition is to be held in Vienna from April 29th to May 4th. The Genoa Exhibition will be held on April 30th, and a great horticultural gathering is to take place at Erfurt from September 9th to 17th.

— MR. SHIRLEY HIBBERD, in a paper read at a recent meeting of the Society of Arts on the "CULTIVATION OF HARDY FRUITS," directed attention in a prominent manner to the irrational mode of pruning generally adopted, and urged the desirability of a free and unrestricted mode of growth to fruit in common with forest trees. The lecturer, in his trenchant manner, alluded to the thickheaded gardeners who go about hacking and slashing, and seemed to take it for granted that trees, as a rule, were pinched and pruned on a system which might be described as preventing fruit trees bearing fruit. While admitting the soundness of the arguments generally it is impossible to ignore the fact that the lecturer was occasionally too sweeping in his surmises. Gardeners, as a rule, must in justice be credited with a considerable amount of knowledge in fruit-production. It is not they who violently restrict and prevent the trees bearing fruit. Many British gardeners are themselves the greatest authorities in practical fruit culture, as their full supplies of fine fruit testify. They know and deplore the pet system of extreme restriction to which many trees have been subjected by amateurs, and are the first to admit the erroneous ideas which have been prevalent as affecting the fruit supply of the nation. Yet, on the other hand, these dwarfed trees (while many have proved profitable) are not always cultivated for profit. It is the pleasure of numerous owners of gardens to cultivate such trees as ornaments or curiosities. The trees are preferred small on the same principle that a great number of small rather than a limited number of huge specimen plants should adorn their greenhouses. On that principle alone the system of dwarfing is justifiable. Like most reformers, the author of the generally useful paper went from one extreme to the other; and it is neither likely nor advisable that a system of no pruning will be uniformly adopted in our gardens. Attention was also directed to a model Peach garden, the trees being trained as espaliers and protected by moveable shelters of boards which can be placed as desired—on the south sides of the trees in spring, to retard the opening of the blossoms until the weather is genial; and on the north sides, to conserve the heat of the sun in summer so as to aid in ripening the fruit and wood. The idea is

worthy of trial; and as it is not patented, a gentleman by the aid of his carpenter and gardener (if the latter is not too "thickheaded") may have crops of fruit on the "wooden wall" system, but—he must prune the trees.

— A SECOND GREAT INTERNATIONAL POTATO SHOW is to be held in the Alexandra Palace on September 28th and 29th, when prizes amounting to upwards of £100 will be offered, the Alexandra Palace Company heading the list by a donation of forty guineas. The last exhibition was a great success—was in fact the finest display of its kind ever held, and the "second edition" will doubtless be as successful as was the first.

— THE ADJOURNED ANNUAL MEETING of the ROYAL HORTICULTURAL SOCIETY to consider the privileges of Fellows for 1876 will be held on Thursday, the 24th, at three o'clock.

— MR. STARK has in the "Journal of the Statistical Society" stated that in the colony of Victoria, Australia, there were in 1874, 9,000,000 VINES UNDER CULTIVATION, producing 105,650 cwt. of Grapes. Most of these were made into wine, an industry which is steadily increasing in the colony. In 1873 there were 88,849 acres of Potatoes, 583 acres of Tobacco, and 16,060 acres were devoted to gardens and orchards.

— THE average production of WINE from French vineyards is estimated at 17,000,000 gallons, and 5,000,000 acres are devoted to the cultivation of the Vine. The annual value of wine, spirits, and liqueurs exported from France is estimated at £16,000,000 sterling; of sparkling wines alone not less than 50,000,000 bottles are exported annually.

ALLAMANDA HENDERSONII.

In the spring of 1873 I planted out in a small border at the back of my stove a young plant of the above. It soon commenced growing, and by the end of September had covered a large portion of the roof, when water was gradually withheld in order to accelerate the ripening of the wood. In February the following year the plant was pruned back and a top-dressing of decayed turf, decayed cow manure, and charcoal was given to the border (the same material being used in planting). In the latter part of May its noble orange blooms began to open, from which time until September hundreds of blooms were picked, when water was again withheld. In February last year the border was again top-dressed and the plant shortened back. About the middle of May the first blooms again opened, and during the four following months it was simply a mass of bloom. During the last Christmas week scores of blooms were picked, although little or no water had been given for three or four months.

Mixed with the brilliant *Vallota purpurea* and the beautiful and chaste *Eucharis amazonica*, with some sprays of Maiden-hair Fern, the combination presents a beautiful appearance. To all who can find room I say—Grow *Allamanda Hendersonii* planted out. I ought to add that during the growing season copious waterings were given and the syringe was freely used.—J. H.

APPLICATION OF MANURE.

THE interesting discussion which took place between Mr. Pearson of Chilwell and the Editors of this Journal on the above subject in the latter part of the year 1869 will be in the recollection of the readers of this Journal. What appeared to me most preposterous was when Mr. Pearson said he had acres of land covered with manure as dry as wind and sun could make it before it was ploughed-in. Since then I have given his system a fair trial, and I have come to the conclusion that he is right, notwithstanding the difference of opinion that may exist between scientific and practical men.

Time and space will not permit to give a detailed account of all my experiments, but I will mention one made in 1874. In March of that year I gave a good dressing of pig and stable manure to a large plot, one half of which dressing was dug-in at once, and the other half was allowed to remain about six weeks on the surface before it was dug-in. The whole plot was planted with Veitch's Autumn Cauliflower. The result from the latter half was so satisfactory that I have decided in favour of Mr. Pearson's practice.

I read from the pages of the Journal the discussion which took place upon the subject before a meeting of the Tunbridge Gardeners' Mutual Improvement Society, when an animated debate ensued, and the prevailing opinion was in favour of

the manure being exposed for some time before it is dug into the ground. I have not written this paper for the purpose of reviving the discussion, but merely to elicit the experience of other practical gardeners.—W. GRAVES.

PARNASSIA PALUSTRIS.

HARDY aquatic or marsh plants have been inquired after, and this "pretty plant with a pretty name" is figured as worthy of notice by those who desire plants of this nature to furnish the damp spots in their gardens. It is popularly known as the Grass of Parnassus, not that it has any resemblance to the Grasses, but the elegance of the plant and its fabled association with Mount Parnassus would seem to be the origin of that poetic appellation.

It is a British plant, found, as its specific name implies, in marshy meadows, and is seldom cultivated, yet is worthy of cultivation. Mr. Robson has written of this plant as being "a low compact-growing plant, in habit resembling some of the Primulas, with a different class of foliage; the flowers, however, are its main points of beauty, and they are very attractive, being white, neatly fringed, erect, and on stalks that enable them to be gathered for nosegay purposes." The plant grows 6 to 9 inches high, and flowers in July. It only needs dibbing in wet boggy soil, and it will grow and flower freely.

USEFUL FRUITS.

SEVERAL profitable letters have recently appeared on the management of hardy fruit trees—their pruning, grafting, and dressing, and for a subject so comprehensive I am surprised that the different writers are so nearly unanimous. A few differences of opinion there have been, but I think they are more apparent than real, and are suggested by local circumstances. I mean, that had the writers all argued from the same orchard they would have been very much alike in their opinions. That I think demonstrates the writers to be practical men, and gives great value to their communications.

So far as the discussion has gone I perceive the following points are agreed to:—First, not to hurriedly destroy an old tree before its successor is established; second, not to prune an old tree, especially if solitary, but leave that operation to Nature; third, not to hesitate to graft a stock provided it is healthy; fourth, not to fear the cutting-down of a tree if its stem is clean and healthy, while the upper parts are knotty and gnarled, the sap vessels choked, so that it may produce new parts; and fifth, to keep the trees, particularly the young wood and fruit-bearing spurs, clear of lichens.

Those conditions are pretty well agreed upon, and I believe them to be sound. As to the mode of carrying them out, each gardener must adopt that which is most suitable to his circumstances.

All that has been said is useful and worth remembering, but something—in fact, a great deal, more is needed to render the discussion completely satisfactory. There are in my opinion two very important matters relative to this subject which as yet have not been alluded to. I should regret for these to be overlooked, and as I take myself to be a representative of hundreds of others, I ask that consideration be given to these two main points—namely, what form of tree is the most useful? and what kinds of, say Apples, Pears, and Plums are the most

profitable for certain soils and districts?

I am convinced that valuable information will result from a discussion of these questions. The demands for fruit are immense, and it is only by the aid of the foreign markets that these demands can be met. Cannot more fruit be grown at home with advantage to the consumer and with profit to the producer? Will not fruit culture realise a return as great or greater than devoting all the land to agricultural purposes? These are important questions. Dwellers in cities are apt to envy the position of the rural population with their advantages of fruit-production, but I think it is very near the fact that fruit is cheaper in cities than in country towns and villages. This ought not to be, for the resources of the country are sufficient to meet the aggregate demand for fruit if those resources are turned to account and based on the experience that cultivators are now able to adduce on this question.

The two main points which I have propounded may possibly have been discussed before, but if so, a vast amount of knowledge has been gained since then, and if that knowledge could be condensed and brought down to the present time the advantages could not fail to be great.

It would be further useful to have some data as guidance aiding to a selection of kinds, but this cannot be too simple, for many conditions would only perplex. Soil might be named as heavy, light, or medium, with an allusion to subsoil; high or lowness of site, and light or heavy rainfall, it would be useful to know; and as to

districts a specification of north, south, or midlands will be sufficient for all practical purposes.

I have long thought of mentioning this matter, but I scarcely knew when and where to do it, but the letters which have recently appeared convince me that now is the time, and "our Journal" the place, to bring the matter forward. If these suggestions are by the "powers that be" thought worthy of mention, I will in a future letter give an example of what I mean, by naming the kinds of fruit that I have found the best and most useful in my midland-counties district.—AMATEUR ORCHARDIST.



Fig. 31.—PARNASSIA PALUSTRIS.

ROYAL HORTICULTURAL SOCIETY.—The Earl of Mount Edgcombe and G. T. Clarke, Esq. were elected, at a special meeting of the Council held after the adjourned Annual General

Meeting on the 10th inst., to fill the vacancies caused by the resignation of Admiral Hornby and Mr. A. Grote, F.L.S.

NEW FRENCH ROSES.

THE time has passed, I think, when one used to scan with intense interest the lists of forthcoming French Roses. Is it that the scanning has palled upon one, and that which once caused excitement has ceased to have its effect? or is it that we have been so often deluded by the high-sounding epithets—the “magnifique,” “superbe,” “variété extra,” &c., which have turned out so fallacious that we cease any longer to look for the one or two grains of gold in the vast quantity of sand? or is it that the English raisers, Messrs. Turner, Paul, Cranston, &c., are giving us such good flowers that we do not care to look so far afield? Perhaps all these causes have combined to work out what, as far as I am personally concerned, is a fact. The test, too, that we used to apply—namely, the character of the raisers, does not now seem to hold good, as indifferent if not worthless flowers flood us on all sides and from all growers. However, it may not be uninteresting just to see what they promise to us for 1876. I find from M. Charles Verdier's list that there are thirteen Teas, one Noisette, one Bourbon, and forty-four Hybrid Perpetuals, besides some four or five others of other classes, such as Perpetual, Noisette, Hybrid Provence, &c.

In Teas the largest number come from the widow Ducher, who gives us five, Pernet three, Levêz three, Guillot one, and Oger one. The Noisette is from Levêz, and the Bourbon from Schwartz, successor of old Guillot.

In Hybrid Perpetuals Mons. Eugène Verdier heads the list with (oh, fortunate man!) twelve new varieties; Lacharme, to whom we owe some of our very best Roses, has four; Levêz two, Soupert et Notting two, Schwartz three, Oger two, Liabaud three, Moreau Robert three, H. Jamain one, Fontaine two, Vignerot three, Ledebaux two, Margottin fils one, Gonod one, Brasseur one, Lapland jeune one, Eugène Genoux one. The last three names are quite new to me, would that it might be the omen of some new break in the interminable list of crimson, rose, tender rose, &c., with which we are inundated. Where amidst all these shall we find the novelties we desire—the flowers that are to create a sensation and to remain *en permanence* in our lists? Echo answers, Where? There is good old honest Lacharme, whom I regard as the king of French Rose-growers, will he not have something in his four new Roses for us? Jean Soupert sounds tempting—large flowers, imbricated, velvety purple; so does Henri Bennett—fiery red and lively carmine. But it is useless guessing, and we must only look forward for our coming shows. But one cannot help thinking that the palmy days for the French Rose-growers are over when the English nurserymen bought everything, propagated largely, and year after year found that they had wasted their stocks, their money, and time. They now, I believe, act more cautiously; but even now they have to lament their precipitancy. Do I not know of one of our most eminent Rose-growers who two years ago bought an English-raised Rose of great promise, paying some £60 for it, and after propagating it to a large extent, finding that it was not up to the mark and would do him no credit if he sent it out, ruthlessly condemned it all to be rooted up and burnt? It was, as he said, a bitter pill to swallow, but better to make a gulp at it than to continually have the taste in one's mouth as customer after customer denounced it.

We have now fairly entered on the competition for new Roses with the French raisers, and I think we may regard the issue with confidence. There is one Rose yet to be sent out which we all saw last season, Mr. Turner's Oxonian, which promises to be one of the most beautifully shaped and exquisite Roses yet raised.—D., Deal.

PEACH-BLOW POTATO.

I HAVE grown the Peach-blow four years. I thought much of it, as did all who ate it, until this year. It now has a large black core, and it is one of the worst affected by the disease. Another objection is that the tubers are too large for a gentleman's table. It is a heavy cropper, but I think its good qualities are outweighed by its bad habits, so shall discard it this year. “J., Lincoln,” speaks of Peach-blow as ripening early. With me it was ready to lift just before Flourball. I strongly suspect Flourball is of American origin, for I had it from America (brought by a friend) the year after it was sent

out by Messrs. Sutton & Sons under another name, and I have had it badly affected with curl for two years.—LINCOLNSHIRE WOLD.

VINCA ROSEA RAISED FROM SEED.

UNDER the above name is generally known a popular old stove plant which is usually raised from cuttings. The correct name of the plant is, I believe, *Catharanthus roseus*, and the readiest and best mode of increase is by seeds. Vines and *Catharanthus* both belong to the same natural order, Apocynaceæ, but the former are hardy and the latter are tender plants.

The plant noticed was introduced from the East Indies about 160 years ago, and straggling plants are frequently seen in stoves and vinerias. It is a stove plant, requiring heat, light, and moisture in the summer months, and a winter temperature of 50°. When well grown this is an attractive summer-flowering plant, and may be trained to any desired form. Fine plants of it have frequently figured at exhibitions. By frequently pinching the shoots a dense bush habit is insured. Good plants may be raised from cuttings, but neither the foliage nor flowers are so fine as on plants raised from seed.

Seed sown now, and the seedlings grown in heat, will make splendid flowering specimens during the summer. I have, with the aid of sufficient top and bottom heat, had plants more than 8 feet through the same season, dense and globular, and masses of bloom. They were shifted-on as required, blooming them in 8-inch pots. In their early stages a compost of peat, loam, and leaf mould is suitable, but after attaining a good size they should be potted in rich loam and manure. They require an abundance of heat, light, and water, and then few plants will grow more freely. They are effective conservatory plants during the early autumn months.

After flowering and resting they may be cut down similarly to *Pelargoniums*; but the flowers on such plants are not so fine or the foliage so exuberant as on plants raised from seed annually. The white variety is also highly worthy of culture. By a system of resting and pinching these plants may be had in bloom at any season, summer or winter.—T. B.

PEACH PRUNING.

PEACH pruning is now in hand, and I strongly recommend a free use of the knife. I once heard a discussion of the treatment of shoots studded with blossom buds and with only a terminal wood bud. The decision was to leave them unpruned, because the removal of the terminal wood bud would cause the blossom buds to fall, which they undoubtedly would do, but in any case the fruit would prove small and poor-flavoured. Such wood should therefore always be cut entirely away. Do not mind if the adoption of this rule leads to an apparently undue amount of severity in pruning; never rest content with weakly trees and undersized fruit, or with quantity at the expense of quality.

Every season one meets with trees of weakly growth and sickly condition overlaid with fruit, small without an exception, and one knows from dear-bought experience how hopeless of improvement is the future of such trees unless they happen to come under a common-sense mode of treatment. By this term I mean a system of culture based upon the evident requirements of the trees. We never can upset the balance of Nature with impunity.

Strong mature wood thinly disposed bears large fruit if it be not overcrowded. It puts forth other shoots often more vigorous than itself. It does not shed its blossom, owing to its ample store of nourishment, the prompt and ready action of its full flow of sap answering every requirement of blossom, fruit, foliage, and wood growth; and it is less liable to the attacks of noxious blight or insects than the tree of weakly growth—weakly either from premature or heavy cropping, faulty pruning, insufficient nutriment, neglect, or mismanagement of some kind or other. Evidently there is a want of balance in such trees. We cannot induce small wood to bear large fruit, nor ought we to expect anything but future deterioration if it has been suffered to bring an abundant crop to maturity.

Here are a few leading points of common-sense culture in reclaiming a mismanaged tree. Cut-out every particle of weakly growth; cleanse the wood from every substance likely to prove hurtful to it; see that the roots are in a rich, wholesome, well-drained soil; cherish and protect the foliage as you

would the blossom. Remember that healthy foliage points to vigorous wood growth, and that aphides and red spider cannot stand clean water, meet therefore their attacks with the sponge and syringe. Do this promptly, watching for invaders, and if possible dislodge the skirmishers, and the attacks of every one of your enemies will fail. Lastly thin-out the fruit, determine to produce the best that can be had in size and quality; and although you may not attain to the highest success, yet the very fact of striving to do so will certainly lead to results of more than ordinary excellence.—EDWARD LUCKHURST.

ROSES FROM CUTTINGS—PRUNING—REPOTTING.

In answer to the questions of "ST. EDMUND," I entirely disapprove of this mode of propagating Roses, and if he thinks he will have good blooms on them this year he will be much disappointed. It takes years to form a good Rose tree from a cutting.

With regard to pruning, I strongly advise (and I fancy my friend Mr. Peach will concur with me) him not to prune them at all. Let them follow their own "sweet will" and grow unchecked. The first object is to root them, and that will take a long time.

With regard to "ST. EDMUND'S" second query as to re-potting, I should recommend him about the beginning of March to repot them in larger pots, and if he can manage it to make a hotbed and plunge the pots in it. In the summer he can take them out and plant them in the open, and next year he can cut them hard, and perhaps in 1878 they may produce good blooms, but I doubt it. I never knew a good Rose shown from a cutting yet, but of course I may be mistaken.

Mr. William Paul is the only nurseryman with whom I am acquainted who grows what are called "own-root Roses."

With regard to this mode of culture I will conclude with a story, told I think by Mr. Winwood Reade, about a certain farmer who never went to bed sober, his particular liquor being brandy and water. This worthy man once paid a visit to a relative in "Somerset," where the only available liquor was "zider." The farmer feeling that his health—nay, perhaps his life—depended upon his making no exception this night to the rule which he had kept for so many years, set to work to bring about the desired result with "zider," but after he had finished his twentieth tumbler he found he was no nearer the haven than he was when he commenced, and so he sighed as he filled up his next tumbler and said, "This is very weary, weary work," and so I am afraid "ST. EDMUND" will find propagating Roses from cuttings.—JOHN B. M. CAMM.

AZALEAS FOR AUTUMN AND WINTER FLOWERING.

THERE are few flowering plants more effective at any season than Azaleas; but they are perhaps more striking and most appreciated from October till the end of the year, when flowering plants are at their scarcest. To bloom them at this season requires some little peculiarity of treatment and a selection of sorts that are best adapted for being forced thus early. It is necessary that they be introduced into a brisk heat and moist atmosphere early in February to make their growth and set their buds early; for unless this be taken as a first, and a season of rest allowed as a second step, the process of forcing them into bloom will not be satisfactory. It is also a favourable condition that the plants be under rather than over-potted, for if the pot is not well filled with roots the tendency of the growth is to be long, and continued later in the season than is desirable; while, on the other hand, a pot well filled with roots produces a short stubby growth, which stops growing sooner, and, as a consequence, sets its buds earlier.

The following are the best that I have tried for getting into bloom so early as October: President Van den Hecke, white, striped and spattered with red. Not by any means a first-rate flower, but the earliest we have tried.

Charles Leiretins.—This is a comparatively new and rare variety. Bright carmine-red; semi-double, very easily brought into bloom early.

Iveryana.—White, striped with crimson. One of the earliest and most free-blooming of all the early varieties. Forced thus early, all the blooms come almost entirely white and without the usual crimson marking.

Beauty of Clapham.—Rich rose-pink.

François Devots.—Clear crimson, semi-double. This is not so early as the foregoing, but can be had in full flower in November; when in contrast with the light varieties it is very effective.

Borsig.—This is a white variety that we know to be a good early one; but not yet having a stock in proper condition for autumn blooming, we cannot speak of it from experience.

These, bloomed at a season when really effective flowering table plants are scarce, are most effective and useful. For room-decoration they are invaluable, for when put into a drawing-room where something more than half the blooms are expended, every one opens freely, and they stand such work longer than most flowering plants.—D. THOMSON.—(*The Gardener*.)

AURICULAS.

LIKE your correspondent at page 106, I am aware of Mr. George Glenny's notes upon Page's Champion, and had read them and tested them in practice before I ever wrote about Auriculas. Those strictures will apply to Champion when he is "out of character." I have seen all those faults in him, but I was thinking of him at his best. The Auricula is yet an uncertain sportive flower, and a perfect one that is constantly perfect has yet to be raised.

Champion is not an easy sort to obtain in its best form, and with regard to Taylor's Glory I have never seen or bloomed it without its wavy paste. But the other great flowers have also their weak points or uncertainties; and while Champion and Glory stand as they do in the best few of their respective classes, the time has hardly come yet to say to an inquirer, "You need not trouble yourself about Champion and Glory."

And, again, I am hardly ready to think with "G. S." that in the scarcity of the Auricula "fancy throws over them a halo which conceals defects" once visible enough when the flower was common. Scarcity is not a desirable point, and it is no property in a good florist's flower. It is nothing in favour of a weak flower to say, "Well, but it is scarce." The scarcer a bad flower is the better. Faults, so far from being now lost sight of in a love-mist of fancy, are all the more keenly seen and felt. In the Tulip and Carnation very great improvements have been obtained. The Auricula is yet a little behind; while far in the rear, friendless and forlorn, last straggler of them all, lags the yellow Picotee.

It would not be difficult to name some inferior green and white-edged Auriculas that would be found as scarce as Champion and Glory; but among those who know the flower, their simple scarcity creates no pressure of demand for them and covers no fault. They quietly drop out of sight. So also will it be in time and turn with Champion and Glory when we have obtained flowers more constant than beat them at their best.—F. D. HORNOR, *Kirkby Malseread, Ripon*.

As "our Journal" is a pleasant exercising ground for our hobbies, will you permit me to mount mine, and take a short canter? In answer to your correspondent "G. S." I desire to express a hope that "ALFRED" is too enthusiastic a lover of Auriculas to be able to take his advice and "live very comfortably without having either Page's Champion or Taylor's Glory." It is, no doubt, kind of "G. S." to comfort "ALFRED" when sighing after the unattainable. But when he proceeds to depreciate those two exquisite varieties, loyalty to my floral queen forbids my silence and prompts the suggestion, How very sour are those Grapes that are hanging out of reach!

I do not pin my faith on any saying of Mr. Glenny thirty years ago, in contradistinction to Mr. Horner and many living authorities who, I know, think most highly of these varieties. I consider Glenny's account of Champion thoroughly incorrect. So far from its "texture being uncertain, the paste thin, and the pipe generally wanting flatness," I have always found it quite the reverse. It is a flower of great substance and lasting powers; the paste is far from being thin; and the flatness of the pipe is one of its chief beauties. I grant that if the flower truss at any stage of its development is touched by frost, then indeed "the paste cracks, the petals divide, and the pipe is much crumpled;" but this is the fault of the florist, not of the flower. As regards the ground colour in Taylor's Glory making through the edge, over-stimulating food is often the cause; and I know no Auricula which may not be spoiled in like manner.

In my opinion "ALFRED" would do well to adopt Mr. Horner's

estimate, and not "live very comfortably" until he possesses and grows well Champion and Glory.—FREDERICK TYMONS, *Clk.*

CORYANTHES SPECIOSA.

This belongs to a genus of which the flowers are of a very singular character, some of the species being also remark-

able for their handsome appearance. One thing very much against them is that the flowers only remain in beauty two or three days. At the same time, wherever a collection of Orchids is grown some of the species of this genus should find a place.

Their culture is not difficult. Like most Orchids they require a season of rest after the growth is completed. The

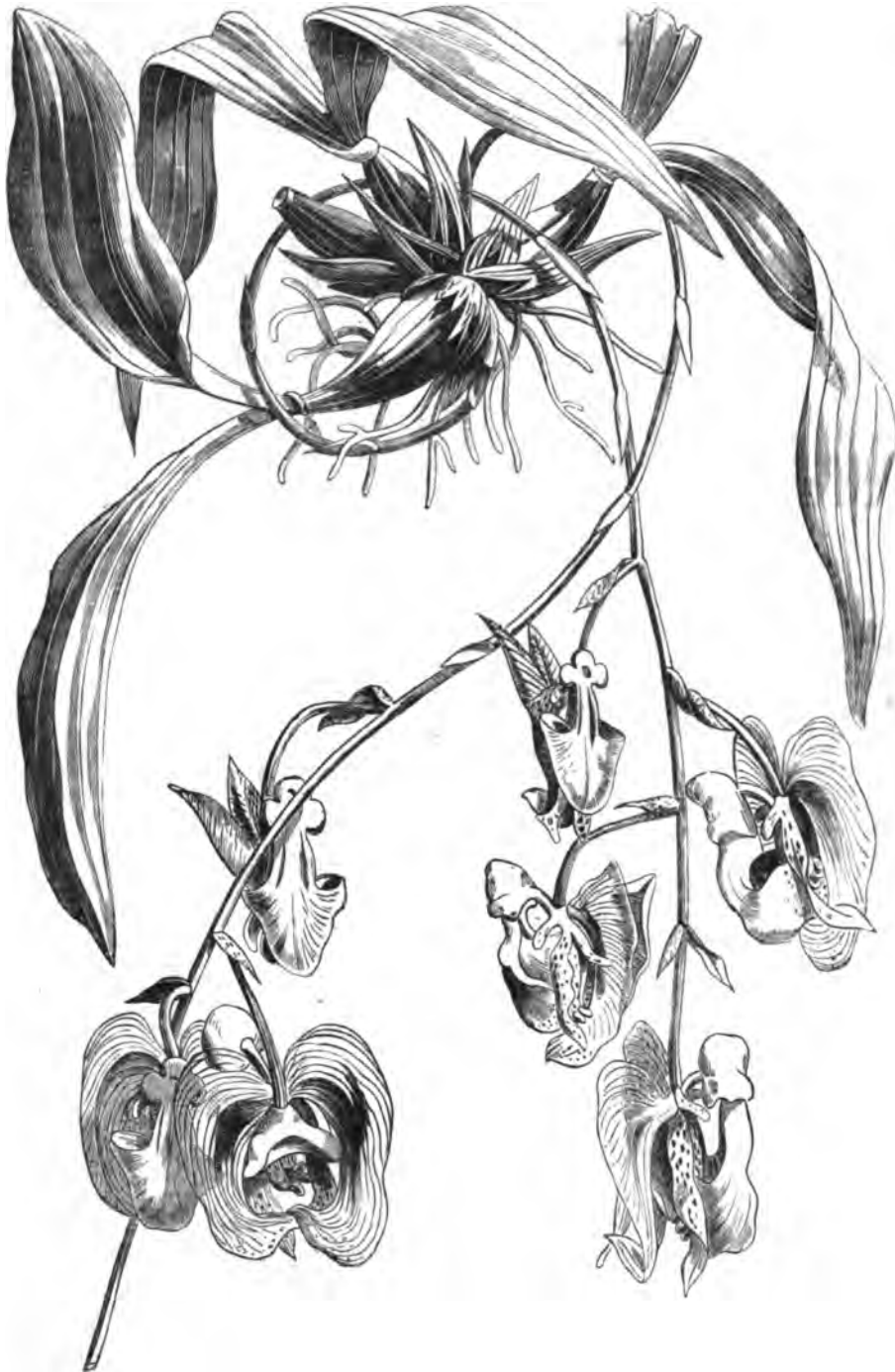


Fig. 82.—CORYANTHES SPECIOSA.

house should be cooler at the resting period, and the roots ought not to be watered until the compost is dry. During growth the plants require good supplies of water, and the roots must not suffer at that time. The pots should be filled two-thirds of their depth with potsherds, and some clean sphagnum

be placed over the crocks. The best compost is very fibry turfy peat and sphagnum in equal parts. They also succeed well in baskets, and will also grow on blocks of wood.

C. speciosa is a native of Brazil, and requires to be grown in the warm house, at least when making its growth. The leaves

must be kept quite clean by occasionally sponging them with tepid water.

THE ARRANGEMENTS OF COLOURS

IN THE BEDS OF THE LONDON PARKS AND GARDENS.—No. 6.

LARGE masses of black or dark brown are always productive of more effect than large masses of white or grey. Black and

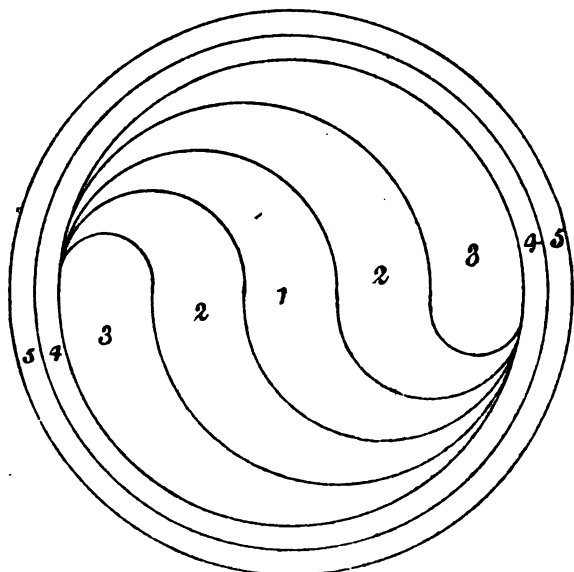


Fig. 83.—BED H.

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| 1. <i>Alternanthera amoena spectabilis</i> . | 4. <i>Lobelia pumila grandiflora</i> . |
| 2. <i>Lobelia pumila grandiflora</i> . | 5. <i>Stellaria graminea aurea</i> . |
| 3. <i>Alternanthera paronychioides</i> ma- | |

white in masses should be sparingly introduced everywhere where the end to be attained is gaiety, variety, and beauty. The good colourist has not only to study harmony of combinations, but suitableness and local fitness, and he will require to vary his scale of colours in depth and tone. For some aspects,

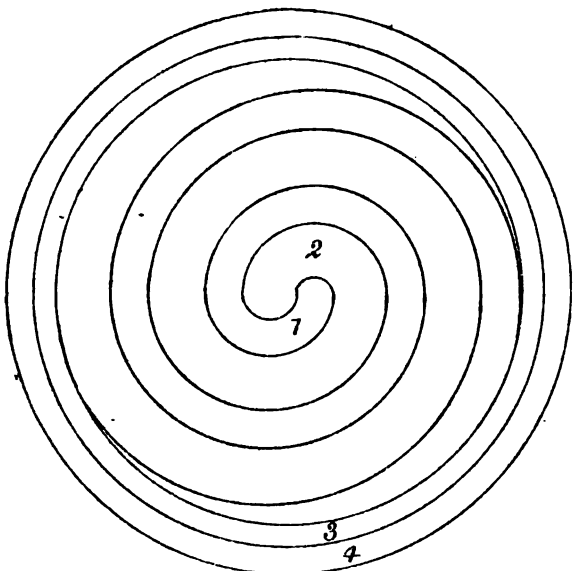


Fig. 84.—BED L.

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|---|---|
| 1. <i>Coleus Verschaffeltii splendens</i> . | with a white eye. Very good and effective. |
| 2. Little Golden Christine Geranium, pink flower and golden leaf. | 4. <i>Mesembryanthemum cordifolium variegatum</i> . |
| 3. <i>Lobelia Blue Bonnet</i> , a rich blue | |

such as near the house or building, he must use cold and soft colours; for distant effect, warm, deep, and rich colours

are necessary. It should be remembered that if any of the primary colours have a mixture or shade of another primary it loses its purity and becomes, in a degree, secondary. The secondary which is complementary to it must contain more of the remaining primary. Thus, if red tends towards scarlet, which is an orange red (red with yellow in it), the green, to be truly complementary, should incline towards the remaining primary blue, and be a blue-green. When red, on the contrary, tends towards crimson (red with a blue in it), then the complementary green should incline towards yellow, and be a yellow-green, and the like rule holds good as to other primaries.

In the harmonies of tertiary hues, as well as of tints and hues, some of the most refined and beautiful arrangements will be found. Thus, primrose, which is a tint of yellow, is in harmony with lilac, which is a tint of purple; while straw colour, which is a tint of orange slightly neutralised, is contrasted with a negative blue tint. These intermediate shades and tints, when nicely arranged, are very satisfactory to the eye, and when harmony is attained from their arrangements the pleasure is greater than from those of the simpler and more obvious kinds of contrasts.

The examples submitted require only a few varieties of plants, and their simple flowing arrangement presents an agreeable change to the more elaborate modes of planting

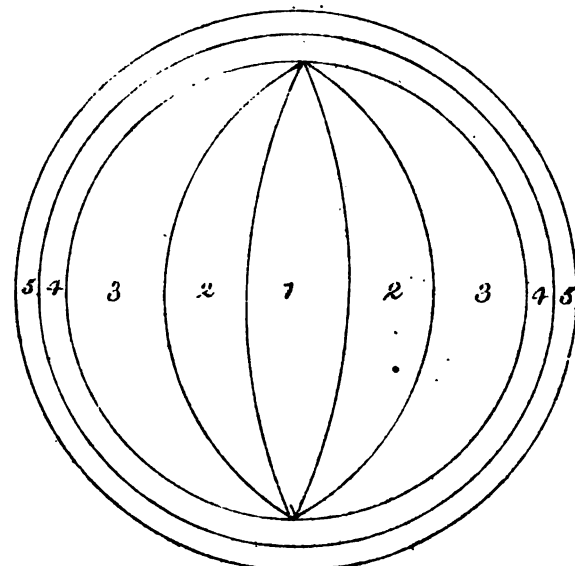


Fig. 85.—BED J.

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|-------------------------------------|--------------------------------------|
| 1. <i>Coleus Verschaffeltii</i> . | 4. <i>Echeveria secunda glauca</i> . |
| 2. Golden Pyrethrum. | 5. <i>Stellaria graminea aurea</i> . |
| 3. <i>Alternanthera magnifica</i> . | |

which have previously been given as suitable for circular beds. I will next consider how oval-shaped beds may be effectively planted.—N. COLE, *Kensington*.

GLASS COPING AND FRUIT CROP FOR 1875.

No. 2.

WHILE admitting that glass coping afforded but little assistance last spring towards the fruit crop, I am equally satisfied that in many, and perhaps in most seasons, it would be of the very greatest value—for instance, a cold, wet, boisterous spring with sharp frosts alternately, would ruin any prospect without the protection of coping and its appendage a screen.

The screen, I am persuaded, is no less valuable than the coping in inclement and windy weather. The south-westers are the winds that prevail just at the critical time of flowering. Now with these winds the coping in itself would cut a poor figure to save the crop. I look on these wet cutting winds to be far more destructive than the hard dry frosts. The wind drives home to the very flower, carrying death to the tender herald of our hopes—a crop. That dry flowers will stand harmless a few degrees of frost is well known, hence coping is so strongly recommended. Coping alone with “south-westers” avails but little, but a good screen in conjunction will make all safe and comfortable. When I advocate coping I include its

necessary adjunct—a screen, for if anyone rests his hope on coping alone, that hope will be lost as sure as the crop. Expectations there will be, I am well assured, under circumstances similar to those of last spring. May they be many, and then, as I have before said, under liberal treatment a reward may be expected.

If we judge from your correspondent Mr. Taylor of Long-leat, we have not well-ripened wood to support the crop this spring, though this is not my case. He comes to a perfect conclusion in saying the crop will be void or almost so. Now I put the question to those who believe that glass coping must produce a crop, if it is reasonable for trees of Mr. Taylor's character to do so if coping were placed over them? The answer must be—Decidedly not. And this is just equivalent to having the trees roasted to ripeness by the end of August. Will coping remodel the puny imperfect bud before it opens? Certainly not. A failure in both instances is sure; but put a coping over a healthy crop of buds shaded with a screen, we can do much. But copings alone cannot insure a crop, as is expected by not a few. Of this we have been convinced by the failures in unheated glass houses.

But why do I dwell so long on the uncertainty of crops under coping? My success the last season was seen by many. It seems my employer never had anything in the garden that gave him so much pleasure. The crop was immense; many were brought to see it; many of them doubtless will have glass coping on the strength of what they have seen, being—(bear in mind, these trees had never produced a crop since being planted seven years ago)—well assured after the coping is up that nothing is required but to wait and then gather the fruit. Then woe be to that gardener the season the fruit is wanting.
—JOHN TAYLOR, *Hardwick Grange.*

GRAFTING AND INARCHING VINES.

FREQUENTLY are instructions as to changing the varieties of Vines solicited, and as this is a favourable season to mention the matter I may, perhaps, not unprofitably detail my practices. No plant or tree that I am acquainted with may be operated on with a greater certainty of success than the Vine. It may be grafted or inarched almost at any period when the sap is moving, and by any mode that is applicable to other plants or trees. It may be whip-grafted, crown-grafted, or side-grafted in spring, and may be inarched in spring on the old wood, or in summer on the growing shoots.

Where a Vine in a pot is provided all that is necessary is to shave off a portion of its bark and wood and a corresponding portion off the stock and fit the former to the latter neatly, tying closely but not tightly, and surrounding the part with moss. The root of the pot Vine will afford support until the union is complete, when it can be gradually severed, leaving the foster parent eventually to support the new branch and future Vine. The inarching is best done when the stock has grown an inch or two and when the young cane to be attached is just swelling its buds. The young shoots of each may be also brought together when in a growing state and the union is speedy, but the operation must then be delicately and dexterously performed, and care must be taken that the ligatures are not too tightly bound. This other plan is perhaps the most to be recommended for ordinary practitioners.

But Vines may require to be grafted or inarched, and when no young canes in pots are provided, and recourse must then be had to bottles of water. If one end of the scion is inserted in water that will answer all the purpose of roots, for the water will support the graft until it has united to the stem to which it is affixed: that is the simplest and the best of all modes of grafting the Vine.

The grafts should be 18 inches or more in length, of stout, well-ripened, fruiting wood. Starting at two or three buds from the top of each a good slice nearly to the pith and also 6 inches long should be taken from the graft, another similar slice being cut from the stock, and the two cuts bound neatly together. There will thus be 6 inches to form the union, 6 inches above it for growth, the portion of the graft below the slice to be inserted in a suspended bottle of water. Ordinary wine or pickle bottles are suitable, and they should be filled with water, adding also a few lumps of charcoal. Smaller bottles are not suitable, needing too frequent attention in replenishing the wasting water.

These bottles should remain for several weeks, indeed until the graft has grown nearly to the top of the house. The ligatures may also remain a long time. The grafts will probably

take root in the bottles, but no injury whatever follows after the graft has become thoroughly united to the stock. These grafts will perfect fruiting canes the first season in all respects as good as if they were regular growths from the Vine. Indeed if they are stopped beyond the bunch which each will show, if the wood is strong and good, these bunches will be in all respects perfect bunches; thus by this means a bunch if desired may be secured on any given part of the Vine: that is sufficient proof of the efficacy of the plan. It is so simple and certain that none need hesitate to adopt it who desire to change the varieties of their Grapes without planting new Vines. I have tried the plan thoroughly, and seldom if ever met with a failure.

I first read of the plan in the Journal, and went to see the place which was described on page 77, vol. xxiv. I found more than a hundred Vines so grafted, many of the grafts being the same season 20 feet in length, and the stocks on which they were grafted bearing a good crop of fruit. The gardener had received his instructions from Mr. Knight of Floors Castle. Some of the grafts were attached to the old stems (four or five-years-old wood) of the Vines, but the finest rods were those worked on the shoots of the previous year, and of the same size and age as the scions.

The great point is to have grafts of well-ripened wood and make the slices both long and deep. A little moss may be tied round them, but that is not really necessary, provided the matting bandages are well applied. The operation may be performed any time in the spring, just when the Vines are being started into growth, and the bottles should be kept filled with water until July or longer, and the ligatures may remain for some time after that.—W. B. S.

SOIL FOR RHODODENDRONS.

MR attention has been called to the fact that the paper on "Soil for Rhododendrons" on page 84, contains an apparent contradiction in the statement that the soil must not contain lime, and yet that they answer well in marl, which all the authorities assert contains a certain quantity of carbonate of lime, yet differ widely as to the correct per-centage which any soil must contain to entitle it to rank as marl, some being content to accept a minimum of 5 per cent., with a maximum of 20, while others are satisfied with nothing under 15 per cent., and actually admit a maximum of 75 per cent. If we are to accept either dictum, then I must withdraw my assertion, for the soil which I have termed marl in perfect good faith has been tested with an acid, and certainly contains no lime, but consists almost entirely of silica in very minute particles, and alumina, the silica predominating very considerably. It is very light in colour, almost white.

The common acceptance of the term marl is, I apprehend, somewhat vague, and I should much like to know if the rule regarding the presence of lime is an inflexible one. Apart from this matter, the importance of my account of the hardness and adaptability of the Rhododendron must be quite patent to all. So important do I consider it, that I strongly reiterate the fact that Rhododendrons will flourish in full vigour in any soil save that which contains lime. Thus far much practical experience enables me to speak positively; but is it not questionable whether all calcareous matter is fatal or even hurtful to the roots of Rhododendrons? To put the matter upon a broader basis, Has anyone proved to demonstration that limestone of every description is really so pernicious a substance as is imagined?

Popular ideas have such great weight that they are not easily set aside, however erroneous they may prove. The supposed necessity of peat for Rhododendrons is an instance of this. It was only some four years ago that a gardener of considerable experience in many things strongly advised me not to risk Rhododendrons in any other soil, insisting upon it that peat was an indispensable necessity. A little later on another visitor was lamenting that he could not plant Rhododendrons owing to the scarcity of peat in the vicinity of a new garden which he was making, and I have a keen remembrance of the evident satisfaction with which he became convinced that he could plant this magnificent shrub in all parts of his garden, and that a bed of Rhododendrons need not be so expensive a luxury as was supposed.—EDWARD LUCKHURST.

THE notes which appeared in your issue of February 3rd I read with much interest. I agree, as a rule, with our friend Mr. Luckhurst, but I confess I cannot this time. He says

Rhododendrons will grow in nearly any kind of soil. Such a statement I think is apt to mislead. It is true they will live in loam, but you do not often meet with loam that is suitable. One of our great nurserymen says they can be grown without peat soil. Well, we had some from there, and what kind of soil had they been grown in? Why, that beautiful sound yellow loam that makes a gardener's teeth water when he meets with it; but I do not hesitate to say they will grow much better with a little peat about them.

In the spring of 1860 I moved a lot of Rhododendrons that had been planted in the common soil of the place, such poor plants that I was sorry for them. I thought I would try if I could not put a better face on them, so I gave them three or four barrowloads of peat soil. In a year or two the effect was wonderful; they seemed to revel in it. In the spring of 1872 I had again to move the same plants, but what a change! Some of them would be from 3 to 5 yards across, with every bit of the peat soil full of roots; you could do anything with them. They are now in full vigour again.

About the year 1864 I planted some in front of a plantation in strong soil approaching clay. I should think something like what our friend Mr. Luckhurst talks about, but grow they cannot—they seem unable to fasten hold of the ground. I say again, Give Rhododendrons some peat soil if possible.—J. B.

FURTHER REMARKS ON OLD APPLE TREES.

WHETHER it be a fitting source of regret or the contrary, it is pretty evident from what has been said on the subject that the respect paid to venerable old Oaks, Beeches, Yews, and even Thorns, does not extend to Apple trees, as no one seems to wish to prolong their lifetime after they cease to be useful; only there remains the knotty point to settle, When is a tree old and no longer profitable? This problem, like many others, depends on the opinion of those who are directly interested in the trees. Your correspondent "AN OLD GARDENER," page 91, justly complains of the Hawthornden Apple canker with him, and consequently the tree will have all the appearance of age except in size at an early period of its existence, a fact very common with that kind everywhere that I have seen it. Although in some situations it is said to grow kindly, I have never seen it do so for more than a dozen years or so. I believe it is but little planted now-a-days, there being plenty of kinds with all the qualities of the Hawthornden, and much better constitution. The New Hawthornden is very likely to supplant its old namesake, but substitutes for the Ribston Pippin are not so plentiful, which, like the Hawthornden, refuses to thrive in many places, and sooner or later becomes cankered, diseased, and unsightly, so that the term "old tree" may very often be applied to the Ribstons that exist in a mixed orchard where the other trees are hardly at their best; but the experienced orchard manager generally knows these peculiarities, and only plants those kinds which thrive in his locality.

Speaking, however, of old Apple trees and how to treat them, one writer, "RADICAL CONSERVATIVE," recommends cutting them down and re-grafting them, and suggests that—as the tree I referred to on page 51, died or nearly so at the end of four years—if I had cut it down to three or four heads instead of about forty, the tree would have succeeded. As I said before, I was not at all surprised at the tree dying when it did, but if I had cut it down as severely as he speaks of I should have expected it to have died one if not two years sooner than it did, besides which it would have been inconvenient inserting some twenty or more kinds of Apples on three or four crowns. That plan was antiquated even in the days of Abercromby, who complains of the grafts being liable to be blown out even after four or five years' growth, consequently it is safer and better to cut the trees into a great number of heads; moreover I may say that experienced men never cut down old or diseased trees for the purpose of grafting them, but healthy large trees are frequently done so, and answer very well. I am still of opinion that there are only two courses available for treating old trees, the one being to let them alone, the other to grub them up. No middle course is satisfactory. Pruning if severe may produce a larger amount of foliage the year it is done, and the operator may fancy that he has improved his trees, but wait three or four years and mark the result, the fact being that old trees cannot endure the ordeal of severe amputations. Younger trees do better, and may be operated on with advantage, either in the way of pruning or of cutting down and re-grafting.

A correspondent has alluded to the fact of solons placed on an old tree producing fruit sooner than young stocks are

likely to do so. This, no doubt, is the case, but I expect a middle-aged tree cut down would produce fruit as soon as an old one, or if not, it would continue to do so longer; nevertheless, it is very good practice now and then to cut down trees of inferior kinds to graft with better sorts. Some years ago, having a quantity of seedling Crab stocks by me, I selected upwards of twenty of the most promising, and took grafts from them which I worked on an Apple tree that was headed-down to some forty or fifty heads, the remainder being worked with a popular kind having only a local name. These seedlings all fruited at the end of two or three years. This tree has since done pretty well, but it was not too old a one, it being the old and diseased trees that it is not advisable to meddle with. Perhaps, however, a good coating of manure might be of service, and the folding and feeding of sheep is assuredly beneficial to orchards. A coating of dung, however, is no doubt the easiest application that can be given.

Although I have elsewhere stated that many Apple trees look old and are much past their best at the age of thirty or forty years, there are others that continue to bear fruit scores of years after that time. In a park here are the remains of an orchard, and very old people inform me that the trees were old but in a good bearing state at the end of the last century. These venerable trees, now reduced to five that are alive, have been noble specimens in their day, and I had the curiosity to measure them to-day and find in height they all exceed 30 feet, two of them being nearly 40 feet. They appear to have had stems 6 feet high, clear and straight, but as most of the lower limbs have been blown off or are gone, the stems are in reality much higher, and there are but few of the branches lower than from 15 to 18 feet from the ground, and the girth of the stems at places where they are quite smooth and about 4 or 5 feet up is from 5 feet to 6 feet 7 inches. These old trees produce fair crops of fruit in favourable seasons. I dare say one of them had at least ten bushels upon it the past season if they could have been gathered, but they require a ladder so long that it is very difficult to reach them, and as fruit was plentiful only a few were gathered.

Now there is every reason to believe that these trees are 150 years old, and from tolerable good sources I can learn that during the present century at least they have had no pruning of any kind beyond what nature provides for all old trees—viz., a limb now and then dropping off. The growth of these old patriarchs is mostly limited to the formation of spurs; but I managed one year to obtain a few grafts, which have taken and look promising, and it will be well to note hereafter whether their progeny possess so robust a constitution as they have shown; but it is only fair to bear in mind that these five trees are the only trees remaining alive on ground that was once an orchard of several acres, and that near them are trees of other kinds risen-up since they themselves had arrived at maturity, and now large enough to shelter them in a certain degree. Added to these advantages I may say that the ground is good. Still for all that it is seldom that trees of such an age are met with, and most likely they would not have been in existence now had they not been treated as I have recommended as being one of the only courses applicable to old trees—namely, to let them alone.—J. ROBSON.

NOVELTIES IN THE ROYAL GARDENS, KEW.

HAVING figured in a recent issue one of the Euphorbias supposed to yield the gum euphorbium of commerce, we now draw attention to *E. resinifera*, of which there are two plants in the Succulent house. This is a native of Morocco, and is defined in the "Pharmacographia"—an exhaustive work, of which the late Daniel Hanbury was one of the authors—as the true plant; and as no mention is made of the other species we may suppose them to be disallowed. In another work, however, it is said that "in all countries where they grow some of them have been, or are, employed medicinally." The plant yielding euphorbium was first described by an English merchant named Jackson, and from the figures he published was doubtfully referred to *E. canariensis*, which abounds on arid rocks in the Canaries. In 1849 the existence of a difference was pointed out, and subsequently the correct plant was figured and established by Berg as *E. resinifera*. Of this specimens were sent to Kew a few years ago, and are now flourishing plants. They are readily distinguished by the glaucous blue appearance of the young growths, and the stems are four-angled, which in this is perhaps a constant character, as it is so described and no deviation as yet appeared. *E. canariensis*,

on the contrary, is five-angled, though branches often commence growth with four, afterwards assuming a fifth, and the colour of the young stems is distinctly inclined to brown. This species is pretty well known, and as the other is similar in habit we need not enter into minute description.

Euphorbia is a drug of very ancient use. Its collection was described by Dioscorides and Pliny; the name, according to the latter writer, being given in honour of Euphorbus, physician to Juba II., King of Mauritania, who died about A.D. 18. It is obtained by making incisions in the green branches, allowing the milky juice to flow, which having hardened by exposure to the air is ready for collection. The collector is obliged to tie a cloth over his mouth and nose to prevent the entrance of the irritating dust. It has a place in all the early pharmacopias, but as a remedy it is now obsolete, and is said to be in some demand as an ingredient of a paint for the protection of ships' bottoms.

To this we may add a few remarks on cultivation, answering equally well for others of similar succulent habit. As might be supposed, they prefer a sunny position. The winter temperature should be from 40° to 45° as a minimum, while in summer, when fire heat is not required, the house with sun heat may rise to what it will, supposing there be a moderate amount of ventilation. It is a good practice not to close the house entirely at night. Being kept dry when at rest it is important to observe when there is inclination to grow, so as to give the required amount of moisture, otherwise the growth may be stunted, as is sometimes the case with Cacti: so treated they get into a weak unhealthy state, and may remain in that condition for a length of time, or even die. Generally speaking Euphorbias and Cacti, as well as most other plants having a dry season of rest, require during their activity a considerable amount of moisture, as it were to balance and prepare for the time of drought.

In potting it is important to insure good and lasting drainage. The compost should consist chiefly of loam, with a good part of broken bricks, throwing in all the chips and dust, and if sufficient is used no sand will be required. The larger pieces may be used for fixing the stems, if they are not already firm, on the roots, which of course they should be if not shaken out. This is usually the best method when support is necessary. The only method of propagation is by means of cuttings, except when seeds are imported. They grow so very easily that no instructions are required. Cuttings may be taken off whenever sufficiently firm, and if possible should be removed close to the parent stem where there is usually a contraction, so as to have as small a cut surface as possible. Unlike Cacti, they are not benefited by being laid in the sun, and will not throw out roots in the air. As soon as the end is dry each cutting should be placed in a small pot as will hold it, and be fixed in with bits of brick, using the same compost as for potting. They root best on a shelf near the glass. At the present time some Euphorbias are inclined to grow, and those that have started must have water occasionally, but no encouragement should be given till the days are longer with more sun, when syringing once or twice a day and shutting up with heat and moisture may be resorted to.

In the Orchid collection many attractive kinds are in flower. *Stenorhynchus speciosus* has a spike of scarlet flowers and bracts proceeding from a tuft of plain green or sometimes spotted leaves. It is a terrestrial species, and should be better known than is the case, being very showy and useful at this season. *Ada aurantiaca* strikes the attention from the bright orange colour of its flowers, a tint rare among Orchids. *Odontoglossums* are represented by several species, among others the new *O. Roezlii* in light and dark varieties, and the Lily-of-the-Valley-like *O. pulchellum*. *Oncidium aureum* is a new introduction of the Messrs. Veitch. It has a bright yellow lip, and is ornamental on that account; but the sepals and petals are much reduced in size and of a pale yellowish green. *O. serratum* is remarkable from its excessively crisped segments. The flowers are large, with the petals united at their tips, of a chocolate brown colour margined with yellow. The spike is much branched and grows from 6 to 12 feet in length. *O. cheiroporum* produces a multitude of small yellow blooms, and is one of the prettiest. Quite distinct is the rose-coloured *O. cucullatum*, the lip covered with purple spots, and its beauty is no less than its deviation from the usual aspect of the genus. Of *Lycaste Skinneri* several plants are in flower, one extremely dark and another very pale, the others being intermediate tints. There are also in this house *Lælia anceps* and *Cattleya Warszewiczii*, besides the very curious *Kestrepia antennifera*.

It much resembles a *Pleurothallis* in habit, but the flowers are very different. The dorsal sepal is very long and has a thickened point; in colour it is yellowish white streaked with purple. The lateral sepals are connate below with a broad blade $1\frac{1}{2}$ inch long, brownish red and thickly dotted with darker colour; easily mistaken for the lip under which it is placed. To this with the petals, which resemble the antennae of an insect, is due the singular character of the flower. These are very long and coloured like the dorsal sepal. The lip is small and inconspicuous.

In the next house is a fine plant of *Vanda suavis* with three large spikes, and a fourth in view. *Goodyera discolor* is not unlovely with its white flowers in contrast to the dark foliage. Several plants of *Phalænopsis amabilis* and *grandiflora* are coming into flower. Of *Dendrobium nobile* there are five varieties. *D. heterocarpum* is just opening. *Angraecum eburneum viridens* is very useful and free-blooming, though less magnificent than *A. sesquipedale*.

APPLE TREES CANKERING—THE HAWTHORNDEN.

OUR Hawthornden Apple trees are in a similar dilemma with those of "C. R." and "AN OLD GARDENER." They are on the Doucin stock, and though the trees bear freely the fruit is very much pitted and cracked, and the branches are very much cankered, dying-off annually until the trees have a wretched appearance. The soil is a light sandy loam naturally, but has been well manured and fresh soil added, and is well drained. I have trees of this kind as standards on Crab stocks, and these are, if anything, worse in point of canker than those on the Doucin or Paradise stock—the standards are in a turfed orchard, in the reverse of an over-stimulated state from richness of soil, whilst the pyramids are not pinched for manure. Thus I have trees in rich and poor soil. Poverty of soil or its opposite extreme are not the best means of avoiding canker, yet no tree that I have seen of this valuable Apple planted within the last thirty years has done other than grow vigorously for a few years, eventually succumbing to canker, the disease spreading at a rate proportionate to the previous free growth of the trees.

In the vale of York I have seen from standard trees very heavy crops of fine unpitted fruit produced by trees anything rather than large and vigorous, they, in fact, being seldom more than half the size of other kinds of the same age. In Vale Royal I have noticed the same result—viz, moderate-sized, and I should say old trees, very free-bearing, producing abundant crops of fine fruit. All the trees I have seen uncankered and producing unpitted and uncracked fruit were certainly not planted within the last twenty years, not one that I have seen in that time doing other than fail.

Seeing that it was utterly futile to continue planting this Apple I have reserved but two trees, and upon those I intend to experiment to the last. They are, or rather were, pyramids, for one is eaten by canker almost to the stump, and is as ugly as a tree well can be. They are on the Paradise stock, and are about thirteen years from the graft. One tree I have cured of canker already in so far as respects the wood, but the fruit is still spotted and cracked. This tree is certainly not half the size of other kinds planted at the same time, but the other woe-begone subject is little beyond a bare stem, gnarled to the wood by canker, its fruit being scabbed and cracked to the core. The roots are healthy, and throw up shoots from the stock freely—proof positive that the channels of the scion are almost closed to the upward passage of the sap: hence new parts are put forth for its appropriation. There is certainly small hope of a tree such as this being restored to health and fruit-bearing, but there is a prospect of the scion originating new parts proof against canker, from not being in a diseased state, showing "a deficiency of vital energy, and consequent inability to imbibe and elaborate the nourishment necessary to sustain its frame in vigour, and much less to supply the healthful development of new parts."—(*Science and Practice of Gardening*, page 353, in which from pages 347 to 356 inclusive is admirably stated the causes of canker.)

The case is clearly one of debility. It may have arisen from over-excitement, from the use of unripened scions, and by the employment of scions taken from trees in an advanced state of decay from canker or old age; but I do not desire to enter at present upon the cause of this disastrous malady; only, as I have stated that I have not seen a healthy tree of Hawthornden planted within the last twenty years survive a bearing

state without exhibiting signs of enfeeblement and of canker, it is incumbent on me to offer such suggestions as appear warranted by experience for the prevention of its recurrence.

First, the stocks are grown in deeply trenched and highly manured soil; they are strong when headed for grafting, the scions are thus literally gorged with sap, and on them is expended the full power of the roots, and a very vigorous growth of scion ensues. Now I want it to be understood that the growth is so soft from the imperfect elaboration of the sap, and the greater part of it is unripe, if indeed the ripe part be not confined to the scion as inserted. The tree is a maiden; and if it is planted out it may be cut down to induce side shoots. In two or three years it is a bearing tree (I am alluding to pyramids), and it is sent out, planted in rich soil, and comes early into bearing. It has been over-excited and then starved into bearing, again forced into growth from a rich soil or high feeding, and nature rebels. Its conduits are closed or partially, the large channels not having in the second or third year so much nutriment passing through them as in the first, from the loss of roots consequent upon removal. Such irrational treatment results in early maturity, oftener a consequence of debility than of health, and causing enfeebled progeny and early decay.

Second, scions taken from trees in a bearing state and inserted in very vigorous out-down stocks, will have a supply of sap ill proportioned to their means of conveyance, and from weakness will of necessity be driven to the extreme of grossness. The foundation is thus laid of the future tree receiving ill supplies of sap, and becomes yearly less vigorous and more unhealthful, and succumbs slowly but surely to disease.

Third, employing soft unripe scions, which becoming dried by severance from the parent must have the vascular system contracted and disorganised; and though the supply of sap may pass this disorganised tissue in sufficient quantity to meet the requirements of the tree in a young state, it does not follow that it can transmit nutriment equal to the requirements of an extended fruitful tree.

What hope is there of a tree in the pitiful state of the Hawthornden? One only, and it is that it may, instead of giving strong shoots from the stock, put out one from the original scion, of which it shows no evidence at present; but the shoots on the stock are put out very near the junction, and I am sanguine enough to trust that the scion will eventually emanate a shoot imbued with health and vigour. I am prompted to this conclusion from having a very badly cankered *Mère de Menage*, cut off by canker to within a few inches of the junction, from which part issued a vigorous shoot, and this shoot is now a fine healthy pyramid in a bearing state, the fruit being finer than its neighbour which has had no canker but has grown vigorously and profitably from the first. Analogy further gives hope, for in cutting and pruning we originate new parts of vigorous growth; and when we have its accompaniment, ample foliage, we place far behind that debility which induces to canker, and attain to that amplitude of foliage and fertility ever presented by—**YORKSHIRE GREENING.**

STRATIFIED ROCKWORK.

As a writer in the Journal has questioned the propriety of artificial rock being made to look like natural stratification, I beg to state that where rocks are thus formed it is because it is in localities where the nearest real rock is stratified, therefore most consistent with Nature, which should be our guide, so as to avoid what is so often termed rockerywork and cockneyfied, which many gentlemen of taste have a horror of. It is the close imitation of the strata, varied in thickness and tone of colour, which is one of the charms of a rockery.

In forming rocks on this principle it is easy and usual to provide such an abundance of soil and root room with drainage that the plants thrive so well, as in a few years the rocks are not only well clothed, but often smothered up with foliage if it be not out now and then. This may be seen at many places, Battersea Park for one.

If, as "C. C. P." says, it is a mistake to try and imitate cliffs and stratification, then all our leading landscapists are wrong, as Mr. Broderick Thomas, Mr. E. Milner, Mr. Marnock, Mr. Kemp, and Mr. Gibson. They have all had it done, and none of them had it done for the exclusive purpose of growing Ferns and Alpines, but to combine, with the foliage and the rocks, a bold picturesque effect, at the same time so natural as to surprise most people when told it is artificially formed. If each stone forming the cliff or waterfall was not put

on its natural bed it would, of course, be unnatural and ridiculous.

I could name many places where the cliffs do abound—on their ledges, in the clefts and crannies—with plants so much in many places that the rock is completely hidden. This is especially so in the sandstone rock, though in most places wherever a choice plant is within reach it is carried off and the cliff made more bare. I grant that the plants thrive well among the fallen rocks and *débris*; this may be done artificially, of course, and the stones may then be placed all manner of ways.

As to Mr. Ingram, or anyone else, maintaining that all stones should be on their bed, and such having but one idea in consequence, I maintain this one idea to be imperative in imitating natural rocky cliffs. Allison, in his "Beauties of the Natural World," says "the form of rock is most sublime." Sir Walter Scott and Wordsworth were delighted among the rocks, and why? because of the grand effects; and though our imitations are comparatively puny, yet, so far as they go, will, as Sir W. Scott says, "charm our fancies' wakening hour, and deeming such nooks the sweetest shade the sun in all his round surveyed."

No such effects can be produced by simply scattering stones and *débris* in the way "C. C. P." desires. There must be the origin apparent, cliff or mother rock; for if, as Allison says, "rock is sublime," what shall be said of a rocky waterfall, a dropping well, a meandering stream, a noble cave, all clothed with fine verdure?

It is all very well, pleasing and interesting, to grow the pretty little Alpines or Ferns, and it is in the screens or *débris* at the base of the cliff they will do well and will be seen best; but for the rugged and bold picturesque effect or grandeur we must have the noble cliff, if only as high as our heads, so as to have the beauty of the numerous plants, great and small, that are available for growing on or about the rock so well in view, as each plant can have in well-arranged rock places suitable for every size, from the characteristic Yew or Holly down to the smallest Alpine.—**JAMES PULHAM.**

NOTES ON VILLA AND SUBURBAN GARDENING.

PLANTING FRUIT TREES.—Although the season is advancing, it is not yet too late for planting the different kinds of hardy fruit trees. I do not think many would advocate spring in preference to autumn planting, but there are no doubt numerous places where spring planting is unavoidable. At whatever time the work is done, the operation requires the greatest care.

Spring planting, and the subsequent treatment of the trees, involves more trouble and anxiety than autumn planting, because the trees have not the same time to make roots to support the growth of the following season, and consequently a little more coaxing in the way of watering and mulching will be needed. But however necessary spring planting may be, I always think it favours late growths, and then if the autumn is unfavourable imperfectly matured buds and unripened wood is the result; nevertheless there is much late planting done with good success.

The trees selected should, if possible, be those that have been previously prepared, more especially if they are large. The roots are then in a closer compass, and consist largely of fibres or feeding roots. There is less difficulty in removal, and less liability to injure the roots in removing the soil from such trees than in the case of others which have had no preparation. As the work goes on let every root cut through be turned up and fastened to the ball of earth by a peg. This will keep them clear from the spade. Take care that none of the trees are planted too deeply, and that the stations for each are wide enough for the full spreading-out of the roots. Prepare the roots by pruning all those that may be bruised or broken. Next proceed to thin some of them out if very thick, but leave all the smaller roots, as these are the mainstay of the tree in its new home. Lay out the roots carefully and regularly, and then bed them in a little good soil prepared for them. I ought to say that the bottom of the hole should be broken up, and, if needful, have a little better soil added as an encouragement to the new roots. Work the soil between the roots with the hand, and take care that they all lie firm upon the soil. When this is done the remainder may be put in with the spade, and in treading it down there is no danger of the roots being torn from the tree or broken.

The trees must be secured against wind by staking them. This must be done in a neat manner, taking care to place a pad of hay, or straw, or matting between the stake and the tree to prevent the bark being rubbed off. After this a watering will do good if the state of the soil in which they have been planted is well drained. The soil should be rather wet than otherwise. After this cover the surface with rough manure or

anything to act as a mulching as far as the roots extend. This may remain till it is decayed, and then it may be lightly pointed into the soil, but not so deep as to injure the roots. This covering is not intended to enrich the soil, but to act against the drought affecting the roots.

Pruning must not be done till after the trees have been planted some time, and when they have partly recovered the check caused by removal. One check at a time is sufficient, and a rest is needed by the tree before any serious pruning is given to the branches.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

INSTRUCTIONS were given last year as to the planting of fruit trees. Those who were unable to do this work at the proper time and still have trees to plant, should lose no time in having the work completed, for if it is longer delayed the young rootlets are not formed before the buds are in motion, and the growth for the ensuing season will be unsatisfactory. We always advise careful planting. All broken or bruised roots should be removed. A hole should be made large enough to allow all the roots to be spread out to their fullest extent. No better material can be obtained in which to plant the trees than decayed turfy loam. A few inches of this should be placed in the hole first, then the roots of the tree, not deeper than they were previously. Some loam should then be worked in amongst the roots with the hand, taking care to fill up all interstices. Fill the hole nearly full with the same material, and tread it down firmly with the feet. When the ground is levelled some manure should be placed on the surface to the fullest extent of the roots. This is not so much to afford a stimulant, but to retain the moisture in the soil about the roots.

We have a few Strawberry plants to put out yet. They were received in the winter, and, being a variety of which a good stock is required this season, the plants were potted singly in small pots and kept in a cold frame. When the weather is favourable they will be planted in well-prepared soil. We have seen plants sent home in the winter and laid in in the open ground, when half of them would be dead and the remainder much injured if severe frost set in before the weather became favourable enough to plant them out in the spring. A season would also be lost before a sufficient number of strong runners could be obtained. If the plants are turned out of the pots into good soil about the middle of March they will grow on at once and produce strong runners by the usual time for layering.

If the permanent fruit trees were infested with the larvae of the lackey moth last season they should be looked over now, if it has not been already done, to destroy the eggs which will be found glued in rings to the smaller branches of the trees. In previous seasons we had much trouble with the Apple maggot. The garden contained a large number of old cankered trees which were annually much infested by this pest, and when these were removed the young Apple trees which were just coming into bearing sustained the attack of the enemy. One season there was a good crop of fruit, but nearly the whole of it was destroyed by the maggot. We tried dusting the trees with quicklime when the buds had started in the spring, but this made but little difference. The best and perhaps the only certain way to destroy the maggot is to pick and gather up all the fruit that has been attacked and have it destroyed. By following this plan year after year the Apples are now almost free from the maggot.

The larvae of the goat moth bores into the old wood. This was also troublesome for a few seasons. It was very difficult to master it on the old and gnarled trees; indeed some of them were killed outright by it. The grubs had tunnelled the bole of large trees from the inner bark to the centre, but the young trees were watched and the maggot was destroyed before it had time to burrow deeper than the bark.

VINEYARDS.

The growths in early houses are now pushing vigorously, and much time is taken up in tying them down carefully to the wires. Most of the growths are stopped two leaves beyond the bunch. Those who have not had much experience in training the young growths will be apt to tie them down too much, which will result in some of the strongest growths snapping at night. It is very annoying to see the leaves begin to flag when the sun acts upon the glass in the morning. All the laterals should be trained in one direction, and to do this easily a strip of matting should be attached to the spurs and fastened tightly at the proper angle to the wires; to this strip the laterals are carefully tied as they increase in growth. The lateral growths will also require to be thinned-out. They ought to be opposite each other, at least as nearly as possible, and from 15 to 18 inches apart; indeed we have had the spurs 2 feet apart, and when the leaves were fully developed the distance did not seem too much.

The night temperature is now 65° both in the Muscat and

Hamburgh houses. The bright sunshine the last few days has run the temperature up in the daytime to 80° and 85°. It has been necessary to admit air cautiously, as the winds have been very keen. The fruit sets very freely in such weather, but it is best to aid it a little by shaking the bunches gently once or twice a-day. There is nothing required now in the late houses. The border was not sufficiently moist in the late Muscat house, and it had some water applied to it. It is a mistake to allow the inside borders to become too dry, and we would water them at midwinter rather than it should be so.

PEACH HOUSE.

We do not mind driving the Vines a little when they begin to grow freely. With plenty of root-action and the borders well supplied with moisture they like plenty of heat, but the Peach trees will not stand it, at any rate not so early in the season. Attend to disbudding and thinning-out the fruit. If the weather should be dull and cold it is best to syringe the trees in the morning only, damping the paths, borders, and walls of the house at closing time. In bright weather, and if the house is closed between 2 and 3 p.m., the trees may be syringed at that time. The weather we have experienced lately has been very suitable to trees in blossom. The atmosphere of the house must be kept moderately dry, and air should be admitted night and day; a very narrow chink left on at the back or top sashes at night will be sufficient. The trees must be shaken every forenoon to distribute the pollen. If there were any brown scale on the trees these would be washed-off before the house was started; at the same time it is quite as well to watch for its appearance and have it destroyed by careful handwashing. No amount of syringing will either destroy this pest or the aphid that infests Peach trees.

MELON HOUSES.

Our plan in previous years was to sow Melons about the first week in January. If we had done so this year the plants would have been ready to plant out now. Last season we were not very successful with them, owing to the nature of the soil used; it was too light for Melons. To grow this fruit successfully the soil ought to be of a clayey nature, and not too rich. There are some who still prefer to train the plants over the surface of the ground, but the best way, by far, is to train the leader up to a trellis fixed near the glass. When the leading growth has reached within 18 inches of the top of the trellis it ought to be stopped. Plenty of fruit will show on the lateral growths. If the varieties are shy bearers the fruit may not show at first, but if the laterals are stopped it will show on the next growth. The Cucumbers have been planted-out. They are grown the same as Melons, except that the soil used to grow the plants in is much richer.

Figs in pots have just been placed in a house where the heat is about 50° at night. They will start strongly if carefully attended as to watering at the roots and being gently syringed overhead in fine days. Those who are fond of Figs would do well to have a house especially devoted to their culture. There is no fruit easier to cultivate in pots than the Fig, and none do better under this system of culture. The plants also do best if the pots can be plunged to three parts of their depth in a bed of leaves or tan. The heat of the bed at the bottom of the pots ought not to exceed 65°. The Fig is also different from most other fruits in this respect—if potting has been neglected it will do no harm to the trees to repot immediately before starting them, or even after the buds have started. The fruit that we usually depend upon is that formed on the young wood as soon as the growth is made. Rich soil ought to be used for potting, and a still richer material for surfacing the pots when the young growths have made some progress. At that time the roots are very active.

GREENHOUSE AND CONSERVATORY.

These structures are kept gay at this season with forced shrubs and flowers, and it is a matter of some importance not only to know how to force them but also the best way to keep them in good condition after they are forced. Flowers last long in beauty at this season if they are well managed. The forcing house ought not to have a higher night temperature than 55°; and if the plants can be removed out of this house into one with a temperature of 45° to 50° at night just before the first flowers open, and when these are fully expanded the plants removed to the show house, the later flowers will open here, and they will experience no check. The culture of the plants or shrubs the previous season is also of considerable importance. No amount of careful after-management will make up for neglect in this particular.

The most lovely of all hardy shrubs used for forcing purposes is the *Deutzia gracilis*. We grow a number of large plants. Some of them have been forced every season for the last ten years. The largest are in 11-inch pots. The plants are taken care of after the flowering period is over. They are kept under glass until the young growths are completed, and when the weather is favourable a sheltered position out of doors is found for them.

Prunus sinensis flore-pleno is also worthy of culture for its

pure white flowers. Rhododendrons of sorts are also invaluable for forcing. The plants may be lifted from the open ground, potted and placed in heat. Only plants that are well furnished with flower buds should be used for potting. They will endure a good deal of water at the roots, and to be freely syringed overhead twice a day.

Roses are very easily forced, but they also must be well established the previous season. The plants should be freely syringed to keep off red spider. The bud worm has always been troublesome to us; but like the maggot on the Apple, it is best to destroy it by hand-picking. A pin or needle is used to pick the worms out from the centre of the young growths, where they are invariably found. The most effectual way to destroy green fly is by fumigation, repeated on successive nights until the pest is vanquished.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

LIVERPOOL (Spring Show). March 5th. Mr. R. Wilson Ker, 6, Bassett Street, Church Street, Hon. Sec.

LAKES (Spring Show). March 15th and 16th. Mr. G. Forbes, 106, Hyde Park Road, Sec.

BRISTOL (Spring Show). March 22nd and 23rd. Mr. G. Webley, Holm Wood, Westbury-upon-Trym, Hon. Sec.

TO CORRESPONDENTS.

EATING NURSERYMEN'S GREENHOUSES (A. F. G.).—We believe that they are not rateable. You will find all we have to say on the subject in our No. 629, page 188.

BONES FOR MANURE (T. W.).—The fresher they are used the better. Burnt bones are not so fertilizing, they then are merely phosphate and carbonate of lime. Rabbit's dung is a powerful manure.

GRAPE GROWING (C. de H.).—We cannot inform you whether a drawing can be had, but we shall publish further particulars.

CUCUMBER HOUSE (J. B.).—We do not know a book devoted to the subject. Keane's "Indoor Gardening," which you can have post free for twenty postage stamps, gives directions for the house management weekly.

EUCALYPTUS GLOBOSUS (W. G. M.).—We never heard of this, it is probably a mistake for *E. globulus*. We have no corrections to offer on the planting of your bed.

LIST OF COOKING APPLES (A. B. G.).—We think we did not recommend those you name. The following are excellent, and are named in the order in which they are ready for use:—Kewwick Codlin, Bedfordshire Foundling, Alfriston, and Dandelion's Seedling.

FIGS FOR STANDARDS (Lady C.).—The hardiest variety is the Brown Turkey, but as your garden is favourably situated in Sussex you may also plant Brown Ischia.

SOIL FOR RHODODENDRONS (J. W.).—See notes in to-day's Journal.

PLANT COLLECTOR (W. H.).—When you have acquired a knowledge of botany, and a knowledge of all the plants at present introduced, you could apply to Messrs. Veitch & Sons and others who occasionally employ collectors. We can give you no information.

PLANTING FLOWER GARDEN (J. Gamett).—We never undertake to specify the plants for the beds, we only criticise any proposed planting. We shall be obliged by a note on ripening the Board's Deal Fear.

MAKING VINE BORDER (A. Constant Reader).—We do not advise you to mix road scrapings with your "loose, light, friable soil." If you can obtain some clayey loam to mix with it that would be of great advantage. It would be of no use to pave the border unless you concrete it at the same time; the roots would go through between the stones or whatever material was used. To every ten cartloads of your soil add one of rich decayed manure and 2 cwt. of crushed bones. Two feet 6 inches will be deep enough for the border, but you ought to have 9 inches or a foot of bricks or some other drainage at the bottom. Barbarossa (Gros Guillaume) and Calabrian Raisin will not do for a cool house; substitute Black Prince and Buckland Sweet-water for them.

TREATMENT OF EUCALYPTUS AMAZONICA (Idem).—When your plant goes out of flower place it at the cool end of the house and keep it moderately dry until the end of April or first week in May. At that time your stove will be at least 65° at night. You should then pot the plant if it requires repotting, and water freely. A short article on the foliage plants may appear in a few weeks.

STARTING CALADIUMS (Mtes Wash).—Report them the early part of next month, using a compost of three parts turfy loam, one part leaf soil, and a half part each of old cow dung and silver sand, with good drainage, bringing them into a moist state at the roots, and gradually, as they advance in growth, sprinkling overhead frequently, and shifting into larger pots as required. When in free growth they require abundant supplies of water, and liquid manure twice a week. They succeed admirably in a stove.

SHOWING PRIMULAS, CYNERARIAS, AND CALCEOLARIAS (Idem).—For autumn and winter flowering, Primulas and Cynérias may be sown in a gentle heat from the middle of March to the beginning of April, the seedlings being potted-off singly in 8-inch pots when they show the first rough leaf, keeping them near the glass in a heated house or frame, and shaded from sun until established, and in June remove to a cold frame, in which they should be grown through the summer with plenty of air and slight shade from bright sun, removing to a greenhouse in September. They should be shifted into larger pots as required. Calceolaria seed should be sown the first fortnight of July in a pan placed in a cold place and shaded from sun, pricking-off the seedlings in pans an inch apart when they are large enough to handle, and potted-off singly in 8-inch pots before they become crowded in the pans, and removing to a light airy position and cool, but safe from frost, in October, shifting into larger pots as required.

TREATMENT OF LILIES OUT OF DOORS (F. M. S.).—You may plant them

out as soon as the weather is favourable. Place some sand round the roots. It is best to leave the roots in the ground all the winter if you have a dry sub soil. Hardy perennials may be divided this month and next.

REPOTTING FERNS (F. W.).—The most suitable time is during March when they commence growing.

SETTING AUCUBA FLOWERS (S. M. W.).—Take a male plant and place it near the female; but if the plants are not in pots, or even if they are, collect the pollen of the male plants, and only when dry, and apply to the female flowers with a camel's-hair brush; but if not in flower at the same time—the male usually flowering earliest—collect the pollen on sheets of clean white paper and keep in a dry cool place until the female plants have the flowers fully open, and apply the pollen, which will adhere to the camel's-hair pencil, drawing the brush across the flowers.

EROTICUS BOYS (W. R.).—Get a summons for some of them to appear before a magistrate.

TRANSPLANTING A LARGE HOLLY (F. Y. Dutton).—Provided there is no obstacle to lifting with a good root and a good ball, as there may be from looseness of soil and proximity to large trees, we see no objection to its lifting safely, being careful to preserve all the roots possible; to water carefully, not soddening the soil, but keeping moist, and securing against winds, cutting-in the head into good shape. If not cut it is likely the tree will have many of the branches die back, or from poor growth have a miserable appearance for a number of years, even if it recovers from the removal. Select for the operation moist weather during the early part of April, just when commencing growth.

CAMELLIAS FOR BACK WALL OF VINERY (W. A. R.).—Camellias planted in a vinery started the first fortnight of February would succeed, but they would flower in early autumn. Unless the plants are a good size to commence it would be a considerable time before they would have grown to make "a show" of much consequence. They would not be effective for half a dozen years. A few good kinds are—Bononiensis, Countess of Derby, Conspectus, Mathotiana, Mathotiana alba, Reticulata rose-plena, Monarch, Valverde, and Mrs. Cope.

PLANTING RHODODENDRONS (Idem).—From now up to and including April is a good time to plant these, but the earlier it is done the better, mild weather being chosen.

CULTURE OF DEUTZIA GRACILIS AND SPIREA JAPONICA (E. L. L.).—Both ought to be potted and introduced to the greenhouse in January, affording them a light airy position. They should be watered moderately until in free growth, and then copiously, the Spiræas requiring a very abundant supply after the spikes rise, and they are aided by weak liquid manure at that time. After flowering the Deutzias should be placed outdoors in an open situation, and be well supplied with water during summer, the pots being plunged in ashes. When the leaves fall repot the plants, removing a great part of the old soil, and repot in the same or a slightly increased size of pot, and plunge in ashes over the rim of the pot, introducing a part of the plants to the greenhouse in January, and another batch a month later. The Spiræas after flowering to be planted outdoors in good rich soil, and well watered during dry weather. After they die down in autumn take them up and pot, plunging over the rim of the pots in ashes, and introducing to the greenhouse in January and February. Turfy loam, with a fourth of leaf soil and well-decayed manure, will grow them well.

GERANIUM LEAVES SPOTTED (G. H.).—The leaves are spotted, but not badly. It arises from too close, cold, and damp an atmosphere. Keep drier and warmer, admitting air freely, and with brighter and warmer weather the plants will come all right.

CYNERARIAS (John Lowley).—The Cynérias flower buds you sent us are not as you apprehend, "blind," but will in due course flower, they being much too backward to do so for a month or six weeks. Assign them a light and airy position in a greenhouse, they appearing to be drawn and weak.

SMOKEY-DISTRICT FLOWERS BORDER (W. J. Taylor).—The arrangement is good, and the plants will answer tolerably well. Had we to contend with your murky atmosphere we should rather depend upon foliage than blossom, planting in a very open gritty soil to afford a free passage for superfluous water in order that no harm should arise from the frequent syringing which is really requisite to keep the foliage healthy and clear, and the colours bright. If this is done regularly, say twice or thrice a week, the deposit of soot—carbon—upon the foliage is washed down to the roots, and a fount pest is thus converted into nutriment. The crimson-leaved Iresine Lindeni would answer well as a substitute for the Geranium. Antennaria tomentosa forms a neat edging of silvery grey; it is perfectly hardy, and spreads quickly. Leucophyton Brownii and Santolina incana are also choice grey-leaved plants with elegant minute foliage and a dense compact habit of growth. Mesembryanthemum cordifolium variegatum, a succulent with pale yellow-margined leaves and dense-spreading decumbent growth, and the two pretty little golden varieties of Arabis—A. lucida variegata and A. albidula variegata, would also answer well. Both of the latter are quite hardy.

NAMES OF FRUITS (W. G.).—The Pear is Uvedale's St. Germain, and is used for stewing; 4, Reinette de Canada; 5, Clagrate Pearmain; 6, Golden Noble.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE SALE SYSTEM AT EXHIBITIONS.

THIS present temporary lull of poultry and Pigeon shows, while the breeding season is going on, seems the opportunity for fanciers of every kind to give any hints to committees and managers of exhibitions that they think advisable for the better conducting of their meetings. There are many schedules of shows which need entirely remodelling, especially of agricultural exhibitions, for there the officers are often cattle people, who do not know whether it is the most advisable to give a class for Brahmas or Polish. Now, the fanciers and amateurs of the districts of their own meetings generally know the strong points of their county, and they should try to get their old-fashioned schedules, which are behind the time, remodelled and made to suit more the existing wants of the times. They can do this much better among themselves than by having recourse to the

papers on poultry; for even could the various organs give space for such correspondence, which if at all taken up in the way it should be would be immense, the local committees of agricultural shows, which are after all the greatest delinquents in being behind the times, would many of them not see such hints, and if they did be probably unwilling to act by them.

Not only in the matter of classification should the fanciers of the district where the various shows are held work for this cause, but to obtain the latest and best new rules and regulations. Some societies put out their old rules year after year, and wonder why their entries dwindle, and that "there ain't so many cocks and hens as last time;" utterly ignorant that now fanciers want double baskets, lower entry fees, the names of the judges, early despatch of catalogues, &c. These matters, then, we leave more to the various agricultural meetings' poultry friends; but there is a point which requires a more general reform, for more than half the existing shows fall in this respect, and so we venture ourselves to call the notice of managers of exhibitions to it. We allude to the present sale system of birds at the catalogue prices.

We should think almost the youngest fancier must have experienced some trouble in this line. We know we have ourselves over and over again, and so have dozens of our friends. Those shows which have auctions we say nothing of; theirs is as satisfactory an arrangement as can be made, and we only *en passant* recommend some of them for their fund's sake to put up as well all the highly commended pens which are not entered above £2 or £3. If once they have the expense of an auction they may as well do this, and it would not take much more time and might bring in more grist to the mill. Few exhibitions, however, are large enough to afford or make it worth their while to sell, or rather put up their birds to auction, and it is of them we write.

There are two or three plans at present in practice—namely, for the first comer at the appointed time of sales to have the pen he wants; or by tender; or again, by the highest bid made at one and the same time having the birds. Against the first system we cannot say too much. We have seen a dozen people all clamouring for a bird, and all declaring they were the first-comers; or we have seen people stand for hours at the door, and then be told, after all the waiting, that the bird is sold. Who the purchaser is, history telleth not; but those naughty little birds will whisper, "Committeemen." The second plan, that of tender, is in many ways satisfactory and good. They tried it at Oxford last season, as have other shows, and we hear they found it to work successfully and satisfactorily; but it has one great drawback—namely, the office has to be open three or four hours to receive the tenders; and by the time the highest are declared many of the exhibitors from a distance have had to leave, and do so ignorant as to whether they have secured the bird or birds; and very possibly, had they known one way or the other before leaving, they would have bought other specimens in the event of not having obtained what they wanted by their tender. Over and over again it happens that there are some two or three pens in a show at a ridiculously low price. Everyone wants them, and a rush is made for the bargains; and it is very tiresome and awkward for the committee, where this old system of first-comers being first served, to know who is really entitled to the pen. We shall never forget the excitement and eagerness of a dozen exhibitors to get some Spanish at Oxford in 1874; and whether the first-comer had the pen or not we do not know, but all we do know is that every Spanish breeder for the rest of the day declared that they ought to have had the bargain.

Well, now, we should try and put a stop to this; and we believe, for the average run of shows, the third of the three plans we named would best answer all ends—that of letting the highest bidder have the bird. We do not mean the highest bid in the day, but the highest made at the one and the same time. Suppose, for instance, a pen was in at 50s., and A, B, C, and D wanted it. If, when the office opened at the appointed hour, the highest bidder of A, B, C, or D, had the pen no one could grumble. This must, however, be stated as to take place in the printed rules, or the results would be worse than ever. We believe this plan would find favour with most people, and it would at any rate prevent the needless waste of two or three hours at the secretary's door for the office to open, as so often takes place, and sometimes too without any good. It would also lessen the troubles of the secretary; and above all, everyone would surely feel satisfied when they knew that at least the highest sum obtained the bargain. We venture to suggest this to committees as a new rule to those who are in want of some such one, and who are now framing their schedules anew, believing that while exhibitors and fanciers will welcome it, managers will find that by it much annoyance and trouble is taken off their shoulders.—W.

THE JACOBIN.

It had not been my intention to write another word on this subject. The vast majority of fanciers are agreed in accepting

Mr. Fulton's description of the bird in his new work, and Mr. Ludlow's admirable portraits in the same work, as their standards; the minority have used their proper privilege of stating their views: here matters naturally end. A minority has in England on all subjects a certain degree of influence, but no power unless they are able in time to become the majority.

But as Mr. Harrison Weir has challenged my statement in regard to another bird—the Turbit, I feel I must "bring him to book." All the works on fancier Pigeons are before me as I write. Moore, A.D. 1735, states that the Turbit "has a round button head," but no word about a crest shell or pointed. The "Treatise," A.D. 1765, states the Turbit "should have a round button head;" and in the portrait of that Pigeon, the first ever known to have been made, shows the bird with round head indeed, but not an atom of crest. The work by Girtton A.D. (according to the British Museum authorities) 1800, gives the same account and a picture equally minus a crest. Eaton's work, A.D. 1858, with notes by Brent, states "They are usually smooth-crowned, though some are point-headed, and others have tolerable hoods." That the first was the rule is shown by the portrait in the same work by Mr. Wolstenholme, who certainly knew the Pigeon of his day better than any man, which is without any crest whatever. Then comes Mr. Brent's own work, published in 1880 I think, with second and third editions reaching to this time, and the portrait in this book also is minus any crest. In the letterpress Mr. Brent states, "Some Turbits are point-headed, others are turned-crowned, but one is considered as good as the other, though I regard the smooth head as the original." Next we come to Mr. Tegetmeier's "Pigeons," published in 1868, where for the first time the Turbit is pictured with a point head, and a great improvement I think it is. Then follows the Birmingham Columbarian portrait in this Journal of April 6th, 1871, with point crest, and then Mr. Fulton's with same and shell.

I distinctly remember in about 1840 seeing Turbits plain-headed, then afterwards shell, then point. Thus improvements were progressive in this bird as in the Jacobin, in which, thanks greatly to Mr. Esquillant, the rose and mane have become established, other fanciers assisting. Progressive, gradual, well-considered improvements there should be.

I am very sorry that Mr. Weir should have thought any word of mine uncourteous, and certainly any reference to old men could not apply to him. There are writers whom I should never think of answering, but Mr. Weir is one of a different stamp, and deserves what I am happy to give in his case—a reply. I have just been looking at Mr. Weir's beautiful "head of Jacobins," the uncoloured one in "Pigeons," and admire it much, and he gives almost as good a mane as could be desired.—WILTSIREN RECTOR.

PULLET EGG-BOUND—SPANISH COCK'S FACE SPOTTED—POULTRY DIET.

I HAVE a fine Buff Coochin pullet that tumbles about in a remarkable manner which I took to be leg-weakness, but in the Journal of the 27th I found an answer which just suited my case. I immediately inserted a feather dipped in castor oil, also gave the pullet a good dose, but with no good result. Next day I drenched her with oil in the egg-passage, besides giving her a large tablespoonful to drink. I inserted my finger, and certainly felt the egg apparently covered with a sort of envelope. I can also feel it outside. I feed her on bread and milk. She is in perfect health, eats, drinks, and looks well. I should like to save her, what must I now do? She has been a fortnight in the state described.

What is the cure for canker? I have a Spanish cock having a rusty spot eating its way into the white earlobe.

Will you also give me your opinion on this? I have Cochins, Dorkings, and other fowls in enclosed good runs, well housed at night, fed each morning with hot food consisting of refuse from a gentleman's kitchen boiled up and thickened with bran; in the afternoon with the best oats whole; on each occasion as much as the fowls can eat. They are from eight months to three years old, and in number about thirty, but produce no eggs.—W. BLACKSTOCK.

[You must continue the application of the oiled feather. It must succeed; we have never known it fail. We do not advise you to touch the egg. The shell before it is laid and comes in contact with the atmosphere is very delicate, and if broken in the passage generally makes a fatal case. It is then rarely laid; and if it is, the broken shell lacerates the delicate membrane through which it passes. You need give no oil internally.]

If the Spanish cock is with hens remove him till the spots have disappeared, or the hens will eat his face. Wipe the spots very dry and then dust them with powdered alum. If the face bleeds you must treat it with oil of rose.

We do not like your dietary. Feed in the morning on slaked barley meal or ground oats. At midday give the household scraps; if they run short, eke out with barley or maize. No oats whole; fowls do not like them, and bran is the worst food

you can give. Give an evening meal same as morning. You will then have eggs.—Eds.]

KENDAL AND NORTH-WESTERN COUNTIES SHOW OF POULTRY, &c.

This was held on the 10th, 11th, and 12th inst., when the following awards were made by the Judges:—

DORRINGS.—Coloured—Cup and 8, J. Walker. 2, Mrs. T. W. L. Hind. *etc.*
L. Pilkington. *Silver-Grey*.—1, Hon. Mrs. Howard. 2, G. Maples. 3, M.
Haines. *Coloured*.—1, J. Walker. 2, Mrs. T. W. L. Hind. 3, L. Pilkington.
Silver-Grey.—1, J. Walker. 2, W. W. Rutledge. 3, Hon. Mrs. Howard. **BRAMA**
POOTRAS.—Cock.—Cup, T. F. Ansell. 2, J. F. Smith. 3 and 5, M. Raines. 4,
F. E. Gibson. *etc.* C. Rayner. *Hen*.—1, Newham & Mandy. 2, J. F. Smith.
3, R. Rayner. 4, J. Purves. 5, Mrs. Hotchkiss. **COCHINS**.—*Buff*.—Cock.—Cup
and 2, J. Walker. 3, G. H. Proctor. *etc.* J. Cattall. *Hen*.—1, J. Walker. 2, H.
Tomlinson. 3, J. O. Rigg. *etc.* J. Hine. G. H. Proctor. J. Cattall. *Any other*
variety.—Cock.—1, H. Lacy. 2, H. Tomlinson. 3, J. Booth. *Hen*.—1, J.
Walker. 2, O. Bloodworth. 3, J. F. Clarkson. *etc.* R. J. Wood. **GAME**
Black-breasted or other Reds.—Cock.—1 and 2, J. R. Fletcher. 3, W. & R.
Adams. *Cockerel*.—Cup, S. Matthews. 2, T. Burgess. 3, J. Pennington. 4, R.
B. Hudson. *Any variety*.—Cock.—1, R. Hawkins. 2, J. R. Fletcher. 3, D.
Harley. 4, J. Nelson. *etc.* H. A. Clark. *Hen*.—1, C. W. Brierley. 2, J. Cook.
3, E. Winwood. 4, J. R. Fletcher. *Black-breasted or other Reds*.—Cup, S.
Matthews. 2, W. Higgins. 3, E. Aykroyd. 4, W. Chambers. **SPANISH**.—*Black*.
—1, H. Beldon. 2, J. Leeming. 3, O. R. Kay. **HAMBURGERS**.—*Golden-spangled*.
—Cup and 2, G. Cartier. 3, J. Cook. *Black*.—1, H. Beldon. 2, D. Dean. *Silver-*
spangled.—1, A. Stirling. 2 and 3, J. Fielding. *Golden-pencilled*.—1, H. Beldon.
2, G. & J. Duckworth. 3, J. Gilmour. *Silver-pencilled*.—1, R. W. Bracewell. 2,
H. Beldon. 3, J. Ashworth. *Black*.—1, H. Beldon. 2, R. L. Garnett. 3, A.
Trickell. **ANY OTHER VARIETY**.—1, A. & W. H. Sylvester (Golden Poland). 2,
H. A. Clark. 3, H. Beldon. *etc.* G. Woods (Grève-Cour). H. Robinson
(Houdans). W. Jackson (Grève). **SELLING CLASSES**.—Cock or Hen or Drake
and Duck. —1, G. Cartier. 2, M. T. Fyfe. 3, J. Yardley. 4, H. Yardley. 5, Mrs.
T. W. L. Hind. *etc.* W. Badger. *Cock and Hen or Drake and Duck*. —1,
G. Cartier. 2, J. D. Nicholson. 3, H. Yardley. 4 and 5, R. L. Garnett. *etc.* D.
Gibson. A. Crosthwaite. H. Dean. **GAME BANTAMS**.—*Black-breasted and other*
Reds.—Cock.—1, Mrs. J. Winkill. 2, J. R. Fletcher. 3, W. F. Addie. 4, R.
Brownlie. *Hen*.—Cup, R. Braithwaite. 2, J. R. Fletcher. 3, H. J. Nicholson.
4, W. F. Addie. *Any other variety*.—Cock.—Cup, J. Barlow. 2, Bellingham
and Gill. 3, J. Cook. *Cockerel*.—Cup, R. Brownlie. 2, J. Winkill.
3, G. Coulthard. 4, J. R. Fletcher. **BANTAMS, OTHER THAN GAME**.—*Black*.
Cup, W. H. Shackleton. 2, J. Walker. 3, C. & J. Illingworth. *Any other*
variety.—1, H. B. Smith. 2, H. Beldon. 3, J. Walker.

GERSE.—1, J. Walker. 2, T. W. L. Hind. **TURKEYS**.—1, W. Wykes. 2, J.
Walker. **DUCKS**.—*Rouen*.—1 and 2, J. Walker. 3, J. Brookwell. *Aylesbury*.
—Cup and 3, J. Walker. 4, W. Wallace. *Any variety*.—1 and 3, J. Walker. 2, M.
Lemo.

SPECIAL PRIZES FOR LOCAL EXHIBITORS.—Mr. E. H. Wilson's Piece of Plate
for the best Pen in Local Classes was awarded to T. J. Harrison. **DORRINGS**.
Chickens.—Cup, Hon. Mrs. Howard. 2 and 3, Mrs. T. W. L. Hind. **BRAMA**
POOTRAS.—*Chickens*.—1, P. Cartmel. 2, G. Cartier. 3, J. Somerville. **COCHIN-**
CHINA.—1, T. J. Harrison. 2, G. E. Cartmel. 3, R. Cornthwaite. **GAME**.
Cockerel.—Cup, J. W. & T. Parker. 2, H. Leighton. 3, J. C. Parker. *Fillet*.
—Cup, H. L. Hindson. 2, H. Leighton. 3, J. W. Fawcett. *Brown-breasted*.—1,
H. Leighton. 2, Robinson & Braithwaite. 3, H. J. Hindson. **SPANISH**.—*Black*.
Chickens.—1, 2 and 3, C. R. Kay. **HAMBURGERS**.—1, T. Stuart. 2, J. Foster. 3,
J. H. Mann. **DUCKS**.—Cup, E. Cartmel. 2, R. S. Willison. 3, Mrs. Willison.
BANTAMS.—1, Smith & Davis. 2 and 3, R. Braithwaite.

PIGEONS.—*Carriers*.—1 and 2, J. Walker. *Pouters or Croppers*.—1, A. T.
Byler. 2, J. W. Towerson. *Antpurses*.—1, J. Stanley. 2, H. Yardley.
Tumbler.—1, H. Yardley. 2, J. Stanley. *Owl*.—1, A. Simpson. 2, H. Beldon.
Barbs.—1 and 2, J. Walker. *Pantails*.—1 and 2, J. F. Loversidge. *Turbits*.—1
and 2, J. F. Loversidge. *Turbits*.—1 and 2, G. Richardson. *Jacobins*.—1, J.
Walker. 2, G. Richardson. *Variety*.—1, A. McKenzie. 2, G. Richardson.
CATS.—*Black, White, or Black-and-white*.—1, D. Brada. 2, J. Moorhouse.
etc. W. Wainwright. *Any other colour*.—1 and extra, E. Baxter. 2, I. Tyson.
Foreign.—1, G. Kirkbride. 2, J. Shaw.

BYEWAYS OF EXPERIENCE IN MANAGING BEES.

A successful plan for securing the largest possible quantity of
honey which recently appeared in the American "Bee-keeper's
Magazine," recalls certain experiences of my own in past years,
which in a measure support the plan and induce me to scribble
off a few paragraphs on the subject.

"The plan is simply to keep a very strong stock queenless
during the period of the greatest flow of honey."

Everybody knows that there is a sort of rivalry going on in
every prosperous hive during the months of May, June, and
July between the queen bee and the common worker bees as to
which of them shall be the first to occupy any vacant cells that
may happen to be in the hive. For a time—I may say at different
times—during the summer, for a week or ten days together, the
queen has it all her own way—that is, when there is no honey
in the flowers above the daily wants of the community; then
the queen bee fills every available cell with eggs, and the whole
energy of the hive is devoted to rearing young bees. But no
sooner is there a superabundance of honey in the fields and
gardens than a change comes over the "spirit of their dream."
The young, it is true, are not neglected; but every bee that can
be spared for the work rushes off in frantic haste to make the
most of the golden harvest which lies secreted in the million
flowers around, and every cell that can be laid hold of is quickly
filled with the precious nectar. It is at this time the rivalry I
have alluded to takes place between the queen and her subjects.
There is no doubt that the increased heat of the hive at this
busy time develops and quickens the natural functions of the
queen. Then it is she lays sometimes many thousand eggs in
a single day, and her impulse is to find a home for every egg in
a suitable cell. I have even seen her at such times, when none
are to be found empty, sit disconsolate on the edge of a comb
and lay her eggs at random, only to be devoured by the attend-
ant bees.

Equally troubled in their different way at such times are the
worker bees themselves. The sudden influx of honey which
follows upon a favourable change of weather at the favoured
moments, few and far between, which our fiftal climate gives
us, often finds the hive totally unprepared to garner with effi-
ciency the precious harvest. Every cell is full of young bees,
and the queen is roaming about watching her opportunity to
re-occupy the cells as fast as they are untenanted by the exit
of the adult young. At night time she is mistress of the situation,
and makes the most of the enforced cessation from honey-gather-
ing on the part of the workers.

It will thus be evident that, however fast the bees make fresh
comb in supers or elsewhere, there are times not seldom occur-
ring when a heavy loss in honey is sustained owing to the great
fertility of the queen, which prompts her to anticipate the workers
and overfill the cells with brood.

The question arises—it has often suggested itself to my own
mind—Can we in any way meet this difficulty and check the
proceedings of the queen, so as to give full opportunity to the
bees? I believe this can be done, and there are several ways
of compassing this desirable object. One way is that which I
have referred to above in language quoted from an American
source. My own experience as a bee-keeper leads me to believe
that the removal of a queen from a vigorous hive at the com-
mencement of good honey-gathering weather will usually be
followed, if the thing be well managed, by a marked and unusual
increase in the harvest of honey as compared with other hives
in the same apiary not so treated, even though they may be
more populous and strong.

Scarcely a year has passed in my experience which does not
recall some instance in which a hive that has lost its queen (no
doubt unawares to the bees, as not unfrequently happens) has
been found heavier and to contain purer honey than more active
and stronger hives in which the queen has been in full activity.
How many are the instances, too, in which hives have been
found in the late autumn to contain a large quantity of recently
collected honey while absolutely tenantless; and this in many
an instance doubtless owing to the same cause—the queen had
died or been lost unperceived by the bees, who themselves died
away almost suddenly in large numbers at the last. The removal
of a queen is the difficulty. It may, however, be easily done at
swarming time, by which means the swarm, returning to the
hive, will generally have several days of uninterrupted honey-
gathering before the development of the next queen and the
issue of the swarm again. In this case, of course, plenty of room
should be given in supers or elsewhere to allow the bees full
opportunity for collecting and storing honey.

I should never advise any violent treatment of the hive, as by
driving or fumigating with a view to secure the person of the
queen; more harm than good would result from it. A queen,
however, may often be seen and caught in a super with glass
windows, without the bees discovering her loss for many days,
in which time much honey may be collected, as also afterwards
during the long period that must elapse before the development
of the young queen, in the case of their subsequent discovery of
their queenless state.

Another way of securing the same object is to entrap the
queen in a super, which may then be placed over an adapting
board on the hive with passages so narrow as to prevent the
queen from descending, while the worker bees have just space
enough to pass up and down. A third plan for meeting the
case is to put the queen into a "queen cage," and confine her in
the very heart of the hive or in a super as long as may be
thought necessary. In this case she could be restored to her
subjects by being set at liberty on the cessation of the honey-
gathering period.—B. & W.

THE WONDERS OF A BEE HIVE.—No. 5.

In my last letter I took a hasty glance at the idleness, suffer-
ings, and sorrows of drone bees, and their melancholy end; I
now come to notice a more pleasing theme—viz., some of the
habits and characteristics of working bees. There is really so
much that is interesting and instructive in their history that one
hardly knows how or where to begin, and it is likely that when
a commencement is made a greater difficulty will be found in
making a finish.

Though poets and historians of all ages have sung and written
about the works and ways of bees, the subjects on which they
delighted to dwell are still as fresh and novel as ever they were.
The things that are seen and approachable in bee history are
quite as marvellous as those that are unseen and unapproach-
able. Yes; notwithstanding all that has been written about
bees in bygone ages, and all that may be written for ages to
come, all thoughtful students of bee history during the next
century will find a world of wonders and mysteries to engage
their attention and excite their admiration.

What a wonderful manifestation of industry do we find in a
bee hive! What architectural skill is displayed in the formation
of cells and the structural arrangements of combs! Talk about
a palace of marble or a city of granite, where shall we find any-

thing produced by the mind and hand of man equal to a city of wax—the habitation of a swarm of bees? What else can be compared to it for economy of space and materials, for beauty and cleanness, and for adaptation of means to an end?

It should be borne in mind that the operations of bees are accomplished in the absence of light. They need neither the light of the sun by day or of the moon by night for indoor labours. Inside a bee hive all is darkness, and yet with what unerring exactness and exquisite finish everything is done! No worker in the community needs to serve one minute of time as an apprentice, for the youngest worker is as skilful and qualified as the most aged and experienced.

What an amount of work is done by a swarm of bees! What countless offices and services which cannot be named or classified are willingly and cheerfully performed by the workers every hour! The heaviest work of the bees may be classed under three heads, viz.,—1, comb-building; 2, the rearing of brood; 3, the gathering and storing of honey; and these go on simultaneously.

In honey weather a very large swarm put into an empty hive will build and finish from 5000 to 10,000 cells a day. During the first forty-eight hours some time is lost in laying the foundations of the combs and getting some fairly begun. Afterwards comb-building goes on with great rapidity. Moreover, the bees have to create the materials (the bricks and mortar) of the combs. Wax is not gathered, it is a secretion of bees and costs them much toil and honey. What industry is manifested by our illiterate servants in ranging fields and forests for honey wherewith to find both food and "furniture" for their homes! And as soon as cells are constructed they are filled with either honey, or brood, or pollen.

Let us now think of the toil of nursing. Young bees need a great deal of food and nursing before they are ten days old. During these ten days food enough is put into their cradle cells to rear them up to full-grown adult life. Every little grub (and there are at least one thousand produced daily) requires food enough to fill its cell before it is sealed up at the end of ten days. How carefully the food is mixed and kneaded before it is given to the young! and all this is done by foster-mothers—the working bees. The maternal duties of the queens (the real mother bees) extend no further than the production and laying of eggs; and we lately have seen that in this work of production the physical powers of queens are heavily taxed. The industry of bees can never be compassed by man; his highest conceptions fall far short of the reality.

Let us now have a few words on the sagacity of bees. No bee-master need rack his ingenuity to find evidence of the sagacity of bees. It may be noticed in the shape and formation of their cells, which dip or slant downwards. Cells are made for both brood and honey, and of course answer admirably for cradles and store-room. If for breeding purposes merely, they would have been probably made quite horizontal, but if made quite horizontal they would have been more difficult to fill with honey; but the bees have wisely given them a dip, so that they are more easily filled with, and are better receptacles of, honey. If a bit of guide comb be given to bees, with the slant running upwards, they accept the comb but reverse the dip of the cells. See also the ladders used by bees to shorten their journeys indoors. If a swarm put into an empty hive do not nearly fill it, the bees let down two or three ladders or ropes of bees on which the outside workers can more readily ascend to the store-rooms.

What thoughtful care is often manifested by the bees of full hives in cold spring days and nights! At this season bees are instinctively anxious to multiply their numbers as quickly as possible, and set eggs in as many cells as they can cover. If the weather become very cold bees cluster in the doorways, and thus make excellent sandbags to preserve the heat of the hives and save the brood from being chilled. In going to and returning from the fields what ingenuity is displayed in windy weather by bees! They cannot fly against the wind. They will go round the base of a hill, even if it is a mile farther, than over it. In such weather bees seek the shelter of banks and hedges, and may be often seen flying at great speed along open ditches; and when there is no kind of protection to be found, they fly so low that it may be said of them they are kissing the surface as they fly along. The sagacity of bees is sometimes evident when there is a scarcity of flowers in their neighbourhood, or a superabundance of bees for the honey flowers. How frequently have we seen bees disappointed in going from flower to flower in search of honey. They were too late; others had secured the sweets. After trying several flowers without success, we have seen them rise like a rocket and go to another part of the field.

Instances of sagacity may be often witnessed in the preparations made for swarming—in the alterations of their programme—by resolving not to swarm owing to unfavourable symptoms after preparations have been made, also in their attempts at housebreaking and robbery. And what shall we say of bees when they find that their hives and homes are lazar houses of foul brood so unendurable that they abandon them to seek a home elsewhere, and it may be in a strange country?—A. PATTISON.

OUR LETTER BOX.

ENCLOSURE FOR FOWLS (H. C.).—A fence of strained wire netting, large-meshed, 6 feet high, will answer your purpose (if one wing be cut), and effectually confine your hens. The wings may be cut at once, and will not require to be done again till after the next moult. The feathers should be cut down to the quill, but not lower nor into it. You may choose among Spanish, Hamburgs, Houdans, and Orpingtons. For ordinary purposes, and for layers only, we prefer the two latter, and of those two the last.

DEAF EARS OF HAMBURGERS (J. D.).—However good the parents may be in white deaf ears, there will always be some chickens that are inferior, but they will be very few. They fall off in moulting time. They acquire a red tinge if they are much driven about, but we have always found that if we bred from good parents we have had good birds. Our experience of family ears is, that a little falling in that respect is often overlooked for the sake of other valuable properties, and the fact is forgotten that defects are more certainly transmitted than virtues.

WOLVERHAMPTON SHOW.—Mr. J. Biddle informs us that his Dark Brahma pullet won the fourth prize.

BARLEYSUGAR FOR BEES (Roselle).—Barleysugar can best be given to bees by thrusting a stick at a time in among the combs at the entrance of the hive. Take care to leave the entrance unblocked by the barleysugar.

QUEEN-RAINING.—"J. O. H." in answer to a correspondent, says that full directions are in Mr. Hunter's "Manual of Bee-keeping."

METEOROLOGICAL OBSERVATIONS.

GARDEN SQUARE, LONDON.
Lat. 51° 38' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1878.	Feb.	Barom. at Sea Level.	Hygromet- er.		Direction of Wind.	Temp. of Soil at ft.	Shade Tem- perature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In	On		
									sun.	grass		
We. 9		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
Th. 10		29.984	59.1	52.4	N.E.	57.0	57.8	50.0	55.5	37.5		
Fri. 11		29.916	58.5	52.8	N.	56.8	56.7	52.2	75.0	38.8		
Sat. 12		29.958	58.3	52.8	N.	56.8	56.8	52.4	58.5	34.3		
Sun. 13		29.997	58.0	52.5	W.	55.2	55.9	52.0	55.5	31.0		
Sun. 18		29.763	59.8	52.0	S.	54.8	55.8	52.4	51.5	21.0		
Mo. 14		29.507	58.3	55.6	S.W.	54.7	55.3	52.4	50.7	28.7		
Tu. 15		29.478	47.7	46.8	S.W.	54.8	55.0	55.6	72.8	31.8		
Means		29.759	58.0	52.1		55.4	56.0	52.5	58.8	35.4		

REMARKS.

- 9th.—White frost; fair but very cold all day; less windy towards night; no fog here, but very thick and black in town.
10th.—White frost in morning; fine all day; slight fog between 7 and 8 P.M., but soon cleared off.
11th.—Very dense fog all day, and at times very dark, but the sun seen plainly through it, so that it was not cloud but fog that made it so dark; in London it was fearfully dark.
12th.—Rather foggy early, but a very fine bright day, though very cold.
13th.—Fog, but soon cleared off, a bright pleasant day; snow commenced a little before 7 P.M., and ceased at 9; nearly 8 inches deep fell in these two hours.
14th.—Fine morning, snow still on the ground; a very fine pleasant day, but rain in the evening.
15th.—Rain all the early part of the day; fine afternoon; but rain again in the evening.
A cold week, especially the 11th, on which day the temperature did not rise to freezing even by the sun thermometer.—G. J. SIMONS.

COVENT GARDEN MARKET.—FEBRUARY 16.

PRICES of all kinds of best fruit have an upward tendency, the supply getting shorter. The market is well stocked with early-forced vegetables, the Channel Islands sending good samples of Ashleaf Kidney Potatoes.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	10 to 12	0 0	Mulberries.....	lb.	0 8 to 0 9
Apricots.....	dozen	0 0 0	Neotaries.....	dozen	0 0 0
Cherries.....	lb.	0 0 0	Oranges.....	£ 100	0 0 12 0
Chestnuts.....	bushel	18 0	Peaches.....	dozen	0 0 0
Currants.....	dozen	0 0 0	Pears, kitchen.....	dozen	0 0 0
Black.....	do.	0 0 0	dessert.....	dozen	2 0 0
Figs.....	dozen	0 0 0	Pine Apples.....	lb.	1 0 4 0
Filberts.....	lb.	0 0 0	Plums.....	dozen	0 0 0
Gobs.....	lb.	0 0 0	Quinces.....	bushel	0 0 0
Gooseberries.....	quart	0 0 0	Raspberries.....	lb.	0 0 0
Grapes, hothouse.....	lb.	0 0 0	Strawberries.....	lb.	0 0 0
Lemons.....	dozen	10 0	Walnuts.....	bushel	4 0 0
Melons.....	each	1 0 2 0	ditto.....	£ 100	1 0 2 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	dozen	4 0 to 6 0	Leeks.....	bunch	0 4 to 0 6
Asparagus.....	£ 100	0 0 0	Mushrooms.....	potato	1 0 0 0
French.....	bundle	18 0 0	Mustard & Cress.....	punnet	0 0 0
Beans, Kidney.....	£ 100	3 0 0	Onions.....	bushel	2 0 0
Beet, Red.....	dozen	1 0 0	pickling.....	quart	0 0 0
Broccoli.....	dozen	0 0 0	Parley.....	doz. bunches	2 0 0
Brussels Sprouts.....	dozen	0 0 0	Peas.....	dozen	0 0 0
Cabbage.....	dozen	1 0 0	Potatoes.....	bushel	0 0 0
Carrots.....	dozen	0 0 0	Kidney.....	dozen	0 0 0
Cauliflower.....	dozen	2 0 0	New.....	lb.	1 0 0
Celery.....	dozen	1 0 0	Radishes.....	doz. bunches	1 0 0
Coleworts.....	doz. bunches	2 0 0	Rhubarb.....	bundle	0 0 0
Cucumbers.....	each	1 0 0	Salsify.....	bundle	0 0 0
Endive.....	dozen	1 0 0	Sourzonera.....	bundle	1 0 0
Fennel.....	bunch	0 0 0	Squash.....	basket	1 0 0
Garlic.....	dozen	0 0 0	Shallots.....	lb.	0 0 0
Herbs.....	bunch	0 0 0	Spinach.....	bushel	4 0 0
Horseradish.....	dozen	0 0 0	Tomatoes.....	dozen	0 0 0
Lettuce.....	dozen	0 0 0	Turnips.....	bunch	0 0 0
French Cabbage.....	dozen	1 0 0	Vegetable Marrows.....	dozen	0 0 0

WEEKLY CALENDAR.

Day of Month.		Day of Week.	FEBRUARY 24—MARCH 1, 1876.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
[Royal Society at 8.30 P.M.]				Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. a.	
24	TH		Royal Horticultural Society's Adjourned Meet. at 8 P.M.	47.1	53.8	55.9	6 59	5 38	7 4	4 34	29	15 25	55
25	F		Quekett (Microscopical) Club at 8 P.M.	47.7	53.7	40.3	6 57	5 30	7 17	5 53	N	18 14	56
26	S		Royal Botanic Society at 8.45 P.M.	47.3	53.6	40.4	6 55	5 32	7 28	7 10	1	15 4	57
27	SUN		QUINQUAGESIMA.	47.7	53.5	40.6	6 53	5 33	7 39	8 30	2	13 53	58
28	M		Royal Geographical Society at 8.30 P.M.	49.1	53.8	40.9	6 50	5 35	7 50	9 51	3	12 43	59
29	TU		[mittées at 11 A.M.]	47.4	53.6	40.5	6 48	5 37	8 4	11 17	4	12 30	60
1	W		Royal Horticultural Society's Fruit and Floral Com.	46.7	54.7	41.7	6 46	5 39	8 29	Morn.	5	12 15	61

From observations taken near London during forty-three years, the average day temperature of the week is 47.8°; and its night temperature 38.3°.

CULTURE OF CROTONS AND MARANTAS FOR EXHIBITION.



THE first-named genus of ornamental-foliaged plants is well adapted for exhibition purposes, and the species best adapted for that purpose are of very easy culture. The staple potting material is good turfy loam from an upland pasture. The turf should be cut thin and stored for about three months before using it. One-third of the compost should be turfy peat, with a little silver sand added, and I have found some broken crocks mixed

with the soil to be beneficial. The Crotons require a considerable supply of water during the growing period and a highly moist atmosphere; 70° at night during the summer and autumn months is a suitable temperature. The pots must be well drained: not only is this of the first importance when the plants are repotted, but some of the fibrous peat should be shaken free from soil and carefully placed over the drainage before putting in the compost. I have seen small plants which had been potted in fine soil produce by far the largest proportion of active roots in the drainage.

Crotons are very much a prey to insect pests. The plants must be kept clean, else the beauty of the foliage is sadly marred. Mealy bug is the worst to deal with, and if this gains a footing on *C. angustifolium* the plant had better be destroyed. Some of the large-leaved species may be cleansed by careful washing by hand with soapy water. Red spider is another formidable enemy if it is not observed in time. Syringing the plants daily with clear tepid rain water will keep it in check; but if this is done carefully from the first the spider will either be destroyed, or will not increase enough to do harm. Brown scale also fastens on the stems and does mischief if it is not removed by hand-washing.

Then, as to the position in which the plants should be placed. Who has not admired the splendid specimens of *C. angustifolium* at the metropolitan exhibitions, its pendulous leaves piled one over the other, and drooping gracefully until the tips of the leaves touch the ground? while as to the colour, one may well quote the words of the poet, describing the doors of the chariot that was sent to convey home the spirits of the old Scottish Covenanters. They were—

"bright and shining,
All dazzling like gold of the seventh refining."

But to obtain the leaves of this bright golden tint the plants must be placed close to the glass, and be exposed to full bright sunshine. I will name a few only of those best adapted for exhibition. Besides *C. angustifolium* alluded to above,

C. variegatum is a very old-established species, and when well grown the glossy green ground colour of the leaves sets off to advantage the rich gold of the margins and midribs.

C. Wiemannii is of recent introduction, and has already proved to be a grand species for exhibition. The leaves

No. 778.—VOL. XXX., NEW SERIES.

retain their splendid golden colour under shade, but when the plant is exposed to the light the leaves are of the brightest gold.

C. undulatum when well grown is also a splendid species. The leaves are large, wavy, beautifully variegated in their different stages with yellow, pink, and crimson.

C. majesticum is a noble species of more recent introduction still; the leaves gracefully recurve or droop, and the whole plant is very graceful. The colour is olive green and yellow, which latter colour changes to crimson as the leaves become older.

The above selection is amply sufficient for exhibition purposes if they are shown simply as foliage plants. If a class is devoted to this genus alone, say six sorts, then others would require to be added. *C. ovalifolium*, *C. Veitchianum*, *C. Youngii*, and *C. maximum* are distinct and first-rate.

MARANTAS are also well adapted for exhibition, the foliage of some of the species is strikingly beautiful, and the plants have distinctive features of a high character. Indeed, whether for exhibition or for the decoration of the plant stove, they are indispensable.

The treatment as regards potting and watering is the same as for Crotons, except that the potting material should be mostly of turfy peat, to which a third of turfy loam may be added. The plants must not be exposed to the sun, but require the usual shade given to stove plants in general. Water abundantly when the plants are in active growth, and maintain a high moist temperature.

I will name only a few of the best sorts. At the top of the list must be placed *M. Veitchiana*. The plant when full grown is over 8 feet in height. The under surface of the leaves is purple, which shows through to the upper side, which is beautifully marked with blotches of yellow and greyish white. This is altogether a splendid-foliaged plant. *M. illustris*, *M. Lindeniana*, *M. rosea picta*, and *M. Van den Hecke* are all fine sorts.—J. DOUGLAS.

CHRYSANTHEMUMS AND THEIR CULTURE—
"EXTENUATING CIRCUMSTANCES."

No. 1.

Few, if any, plants during their season of flowering are capable of producing such a gorgeous display as do Chrysanthemums. They produce also, it must be added, not unfrequently some disappointment. Let me explain, for the matter is worthy of being alluded to for the information of employers, and as just to the employed.

I have been many years a grower of Chrysanthemums; and while I was as successful as my neighbours and was not often found fault with, still my employer seldom failed to let me know that his blooms were inferior to those he had seen at the metropolitan exhibitions of this flower. At that time I had not seen one of those exhibitions. Last autumn, however, a visit to "town" enabled me to see the plants at the Temple and also those in some of the principal nurseries.

My first visit was to the Temple, where I found a glowing display, and many ladies and gentlemen taking names

No. 1430.—VOL. LV., OLD SERIES.

thing produced by the mind and hand of man equal to a city of wax—the habitation of a swarm of bees? What else can be compared to it for economy of space and materials, for beauty and cleanness, and for adaptation of means to an end?

It should be borne in mind that the operations of bees are accomplished in the absence of light. They need neither the light of the sun by day or of the moon by night for indoor labours. Inside a bee hive all is darkness, and yet with what unerring exactness and exquisite finish everything is done! No worker in the community needs to serve one minute of time as an apprentice, for the youngest worker is as skilful and qualified as the most aged and experienced.

What an amount of work is done by a swarm of bees! What countless offices and services which cannot be named or classified are willingly and cheerfully performed by the workers every hour! The heaviest work of the bees may be classed under three heads, viz.,—1, comb-building; 2, the rearing of brood; 3, the gathering and storing of honey; and these go on simultaneously.

In honey weather a very large swarm put into an empty hive will build and finish from 5000 to 10,000 cells a day. During the first forty-eight hours some time is lost in laying the foundations of the combs and getting some fairly begun. Afterwards comb-building goes on with great rapidity. Moreover, the bees have to create the materials (the bricks and mortar) of the combs. Wax is not gathered, it is a secretion of bees and costs them much toil and honey. What industry is manifested by our lilliputian servants in ranging fields and forests for honey wherewith to find both food and "furniture" for their homes! And as soon as cells are constructed they are filled with either honey, or brood, or pollen.

Let us now think of the toil of nursing. Young bees need a great deal of food and nursing before they are ten days old. During these ten days food enough is put into their cradle cells to rear them up to full-grown adult life. Every little grub (and there are at least one thousand produced daily) requires food enough to fill its cell before it is sealed up at the end of ten days. How carefully the food is mixed and kneaded before it is given to the young! and all this is done by foster-mothers—the working bees. The maternal duties of the queens (the real mother bees) extend no further than the production and laying of eggs; and we lately have seen that in this work of production the physical powers of queens are heavily taxed. The industry of bees can never be compassed by man; his highest conceptions fall far short of the reality.

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METEOROLOGICAL OBSERVATIONS.

GARDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Baromet. at 9 A.M. and Sea Level.	Hygrom- eter.		Direction of Wind.	Temp. of Air at 9 A.M.	Shade Tem- perature.		Radiation Temperature.		h.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1892.	Inches.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	
Feb.										
We. 9	29.864	36.1	32.4	N.E.	37.0	32.0	30.0	32.0	32.0	-
Th. 10	29.916	30.6	32.5	N.	34.3	32.7	32.5	32.0	32.5	-
Fri. 11	29.896	32.3	32.3	N.	36.6	32.8	32.4	32.0	32.5	-
Sat. 12	29.897	32.0	32.5	W.	35.2	35.9	32.0	32.5	32.0	-
Sun. 13	29.763	32.5	32.0	S.	34.8	35.8	32.4	32.5	32.0	1.00
Mo. 14	29.507	35.3	35.6	S.W.	34.7	45.3	32.6	32.0	32.7	1.00
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14th.—Fine morning, snow still on the ground; a very fine pleasant day, but rain in the evening.
15th.—Rain all the early part of the day; fine afternoon; but rain again in the evening.

A cold week, especially the 11th, on which day the temperature did not rise to freezing even by the sun thermometer.—G. J. SYMONS.

COVENT GARDEN MARKET.—FEBRUARY 14.

PRICES of all kinds of best fruit have an upward tendency, the supply getting shorter. The market is well stocked with early forced vegetables, the Channel Islands sending good samples of Ashleaf Kidney Potatoes.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	dozen	0	0	2	0	Mulberries.....	lb.	0	10
Apricots.....	dozen	0	0	0	0	Nectarines.....	dozen	0	10
Cherries.....	lb.	0	0	0	0	Oranges.....	£ 100	0	10
Chestnuts.....	bushel	12	0	30	0	Peaches.....	dozen	0	10
Courants.....	dozen	0	0	0	0	Pears, kitchen.....	dozen	0	10
Black.....	do.	0	0	0	0	dessert.....	dozen	0	10
Figs.....	dozen	0	0	0	0	Pine Apples.....	lb.	1	0
Filberts.....	lb.	0	6	0	2	Plums.....	dozen	0	10
Gobs.....	lb.	0	6	0	2	Quinces.....	bushel	0	10
Gooseberries.....	quart	0	0	0	0	Raspberries.....	lb.	0	10
Grapes, kitchen.....	lb.	0	0	0	0	Strawberries.....	dozen	0	10
Lemons.....	£ 100	6	0	12	0	Walnuts.....	bushel	4	0
Melons.....	each	1	0	2	6	ditto.....	£ 100	1	0

VEGETABLES.

		s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	4	0	6	0	Leeks.....	bunch	1	0	0
Asparagus.....	£ 100	6	0	10	0	Mushrooms.....	potato	1	0	0
French.....	bundle	18	0	0	0	Mustard.....	dozen	1	0	0
Beans, Kidney.....	£ 100	2	0	2	0	Onion.....	dozen	0	1	0
Beet, Red.....	dozen	1	6	0	0					
Broccoli.....	dozen	0	9	1	6	Par.....				
Brussels Sprouts.....	dozen	1	6	0	0	Pa.....				
Cabbage.....	dozen	1	0	0	0	Pe.....				
Carrots.....	bunch	0	4	2	0	P.....				
Capsicums.....	£ 100	1	6	2	0					
Cauliflower.....	dozen	1	0	6	0					
Celery.....	dozen	1	6	2	0	P.....				
Coleworts.....	doz. bunches	2	0	4	0	F.....				
Cucumbers.....	each	1	6	3	0	f.....				
Endive.....	dozen	1	0	3	0					
Fennel.....	bunch	0	8	6	0					
Garlic.....	lb.	0	8	0	0					
Herbs.....	bunch	0	8	0	0					
Horseradish.....	dozen	4	0	0	0					
Lettuce.....	dozen	0	6	1	0					
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RECEIVED 12-12-54
U. S. DEPT. OF JUSTICE
WASHINGTON, D. C.

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THE first-named genus of ornamental-foliaged plants is well adapted for exhibition purposes, and the species best adapted for that purpose are of very easy culture. The staple potting material is good turfy loam from an upland pasture. The turf should be cut thin and stored for about three months before using it. One-third of the compost should be turfy peat, with a little silver sand added, and I have found some broken crocks mixed to be beneficial. The Crotons require a copious supply of water during the growing period and a moist atmosphere; 70° at night during the summer months is a suitable temperature. The soil should be well drained: not only is this of the first importance in the case of the plants, but some of them should be shaken free from soil and repotted over the drainage before putting in the new soil. I have seen small plants which had been potted in this way by far the largest proportion of active

much a prey to insect pests. The
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Mealy bug is the worst to deal with.
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All dazzling like gold of the seven ^{"bright}

But to obtain the leaves of this ~~tree~~
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luded to above.

C. variegatum is a very
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ous sets off to advan-
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C. Wiesmannii Iso
proved to be a grass
No. 778-Vol. XXX.

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and notes, and not a few expressing surprise that they could not have such highly perfected blooms at home. One lady especially was in trouble at the comparison she was instituting between her plants at home and the noble specimens arranged by Mr. Newton. I took the liberty of speaking to the lady, and to our conversation we soon had quite a little crowd of listeners. I first inquired if she had a large conservatory; to which she replied, "No, but I have a very nice greenhouse with a stage in the centre, and as I am told that these plants have been grown in the open garden all the summer I cannot see why I should not have plants equally fine." "But," I inquired, "have you well examined these plants? because, as plants, I think we cannot call them fine at all. The blooms are splendid, but the plants are—trees." "What! are not these plants fine? Pray explain to me," exclaimed the astonished lady, which I did as nearly as possible in the following words:—

"It is necessary to notice, in the first place, that we are on a platform much higher than the border in which the pots are plunged, and yet, notwithstanding our elevation and their depression, the flowers are higher than our heads; then if we examine carefully we must see that the pots touch each other, and that each plant is but a single stem surmounted by three or four blooms. Now, if we take out a single plant and place it on the walk we find it, as a plant, has no beauty, and the few fine blooms are high over our heads. Suppose, further, we elevate such a plant on your greenhouse stage, how would it look?" "Indeed," interrupted the lady, "I did not think of it before, but such plants would not have room in my house at all; but cannot we have those fine blooms except on tall plants?" I explained that such fine blooms cannot be had otherwise than by limiting their number and growing the plants for a long period without stopping them. Such plants evince skillful culture, but they have had special care, and have been provided for a special purpose.

Now, it is very essential that that be kept in mind. The lady, I take it, represented a hundred others who witness and admire, but who cannot be expected to discriminate in a practical manner and appreciate fully the different circumstances and objects connected with growing plants and flowers for a special and public purpose on the one hand, and those which must be produced for home effect and by home appliances on the other.

Something further may be also kept in mind. The plants produced for public exhibition receive almost the undivided care of an able cultivator. His other duties are subsidiary. He has no hungry cook crying aloud for every delicacy in season and out of season; he has no Grapes which need his care, no Cucumbers to be smitten by disease or Melons with red spider. He has no successional batches of ornamental plants to provide for the conservatory, dinner table, and drawing-room, which must be furnished at all seasons. He has no dinner parties to supply with fruit and vegetables forced and unforced, and a hundred other demands which divide his thought, energies, and attention.

I have often wondered that this matter, which affects so intimately gardeners and their employers, has not had the prominence given to it that the subject demands. Exhibitions are visited, and special results of special effort are submitted for admiration, but seldom are the real facts connected with their production realised. By the accidental meeting with the lady referred to I have no doubt I did a favour to some gardener who was probably doing his best in the discharge of his duties, but who would have had much difficulty in explaining why his blooms of *Chrysanthemums* were not so fine as those which his mistress would have described to him, and produced by plants and under circumstances of which both mistress and man were ignorant. But if I did a favour to the gardener I conferred one also on the lady, who was very glad to be informed on the matter, no doubt as preventing her making a complaint on inadequate grounds.

It may be said in honour of employers generally that they are loth to complain without reason, and that most of them are ready to listen to "extenuating circumstances" when such have real weight. It is to instruct where I think instruction is needed that I pen these remarks, for an object cannot be correctly judged without a full knowledge and appreciation of the ways and means of the producer, and, it may be, the multifarious nature of his duties.

As this is the usual period for commencing preparations for the autumn display, I will append a list of some of the finest varieties that I noticed in London. They were King of Dem-

mark, White Beverley, Prince Alfred, Gloria Mundi, Empress of India, George Glenn, Mrs. G. Rundle, Golden Beverley, Prince of Wales, Pink Perfection, Garibaldi, White Globe, Alfred Salter, Nil Desperandum, Jardin des Plantes (bronze, and yellow), John Salter, Fingal, and White Venus. Those were the finest blooms. I saw also highly attractive plants of the following:—Princess of Teck, Dr. Sharpe, Mrs. Sharpe, Aureum Multiflorum, Aimée Ferrière, Ariadne, Progne (sweet-scented), Lady Talfourd, Prince Alfred, and Julie Lagravère. The best of the Pompons were Acme of Perfection, Miss Julia, Golden Aurora, Antonius, Mr. Aste, Madame Martha, Marie Stuart, Bob, Little Harry, Andromeda, Mr. Dix, and Dick Turpin. In the Japanese section Elaine is the most useful. Gloire de Toulouse, Garnet, Cry Kung, Red Dragon, and The Cossack I also noted as amongst the best.

This may be taken as a useful selection, and if strong cuttings are selected now and not weakened by a high temperature, and if the plants are treated liberally, receiving no checks by being pot-bound or insufficiently watered, a display will be produced next November which will amply reward the grower for his vigilance and attention. I will add further notes on the summer culture of the plants in a future communication.—A COUNTRY GARDENER.

PEARS AND THEIR CULTURE.—No. 2.

OLD Pear trees are often a source of annoyance from the barren state in which they continue year after year. Vigorous shoots are often plentiful enough, and add to our vexation by the clear evidence which they afford that it does not arise from feebleness. Perhaps the worst aspect under which it presents itself is in trees of choice kinds trained to walls. Now wall space is most valuable, and yet it is no uncommon sight to see huge old trees, each spreading its barren branches over 300 or 400 square feet of it. What shall we do with them? It may help to render our answer more distinct if we first of all inquire, What have we done to them? An ardent reformer was once showing me some old Pear trees with magnificent spurs, such as it takes a lifetime to perfect, and describing how he intended "improving" them by cutting away all the old spurs to make them neat, and to have the fruit close to the stems! I was not surprised to hear that the reformer's services were dispensed with after another season. Such instances of foolish mutilation are by no means uncommon. I for one must plead guilty to some blunders in that direction. Spurs are formed solely to obtain fruit; to remove them is to set aside all chances of a crop till fresh spurs are formed, and that crop will be pretty much in proportion to the size of the spurs within certain limits. Let us, therefore, never hastily remove old spurs. If they are crowded thin them, cut away or cleanse any diseased parts as may appear best, manure the soil, and apply liberal surface-dressings to induce a plentiful formation of roots in the upper part of the soil. Give this plan a fair trial, say about three years, and if then fertility does not ensue, waste no more time over the spurs but cut off the branches themselves to within 6 or 8 inches of the main stem, and graft some other sort upon them—a graft to each branch. Such an attempt to renovate old spurs is, of course, only desirable when the variety is of known excellence; in all other instances graft at once. The grafting may be done successfully and with excellent results, even when the stems are in a state of partial decay. I once so grafted a couple of very old trees with perfectly hollow boles. The grafts grew with surprising vigour, forming as fine a lot of fruitful branches as could be wished. Subsequently when the quaint old trees became laden with excellent fruit they were regarded as great curiosities; they certainly were remarkable, as clearly demonstrating by what simple means a recuperation of fertility may be promptly effected.

Orchard trees, whether of a bush, pyramidal, or standard form, are all amenable to this treatment. Whenever you have trees which are unfertile, or varieties which prove unsuitable for your particular soil or climate, never destroy, but cut-back and graft. In doing this it was once customary to remove the entire head of a faulty standard, cutting it back to within a foot or two of the bole. Now we do better by a moderate shortening of the branches, removing all the spray, leaving lengths of 6 feet and upwards, so as to retain all the main and many of the lateral branch stems, using a dozen or two of grafts instead of only three or four, and thus saving all the time which was formerly wasted in reforming the head of each tree, the graft-growth being devoted solely to its legiti-

mate work—the formation of fruiting wood. Bush trees are treated upon the same principle by grafting every main branch after it is shortened to about a foot from the stem. Pyramids also have a graft inserted in every side branch, the form of a cone being retained by leaving the lower branches a foot in length, and graduating upwards to some 3 or 4 inches near the top. The principle which rules the operation in each instance is to retain what may be termed the framework of each tree, regarding the stem and main branches as supports for the fruiting wood, and which, when once formed, should be retained so long as they answer that purpose.—EDWARD LUCKHURST.

LIBONIA FLORIBUNDA CULTURE.

CONSIDERING the time of year at which the above plant blooms, its long duration and easy culture, I think that it is not so extensively grown as it deserves; to promote its more general employment as a decorative plant I will state the mode of culture which I find successful. Cuttings taken at the present time and inserted in good sandy soil will readily strike root in a bottom heat of about 60°. I generally place three or four cuttings in a small pot, and as soon as struck give them a shift without disturbing the ball, as by this means bushy plants are sooner formed than by growing only one plant in a pot. A sandy loam with an admixture of leaf mould is a good compost to grow them in during the early stages of their growth, after which a little decayed manure should be added.

By growing them on in a cool well-ventilated house they are ready to take their stand by the side of Azaleas, &c., when the latter are placed out of doors for the summer, the Libonias to be treated the same as the Azaleas, with the exception of the soil they are grown in. When the time arrives for housing them they will be found to have grown into stiff bushy plants studded with numerous buds, to burst forth ere long into beautiful crimson and orange flowers, which open at a time of year when flowers are generally scarce.

For duration of blooming it is one of the best greenhouse plants, as with tolerable attention it may be kept in flower from December to March, producing a good effect when placed amongst Deutzias, Coronillas, &c. It is also useful for cutting from for bouquets, and is generally admired by ladies.

After the blooming season is over the plants may be shifted, or, if convenience requires, only the surface soil may be removed and replaced by a rich compost, and the pots placed in an airy part of the greenhouse until the time comes round to remove them out of doors again. They require a good deal of water, and especially during their growing season should not be allowed to get dry, or a shedding of the lower leaves is the consequence.—W. W.

LEEKS.

CAMBRIA may have adopted for its emblem the Leek for its usefulness and to spite its neighbouring kingdoms. Anglia had adopted the Rose, Scotia the spiny dreathed Thistle, and Hibernia the lowly mystic Shamrock. The Rose emblematic of the beautiful, the Thistle of resistance, and the Shamrock of dependance, all lack the representative utility expressed by the Leek. Leek is not a greatly favoured article of Welsh vegetable diet, and is not cultivated by the possessors of gardens, in small or large plots, as are Gooseberries by the Lancastrians or Celery by the Sheffield cutlers. It is not in Wales or among the Welsh that the Leek finds its votaries. It is not until we advance to and even pass the "border" northward that we find extended and careful culture given the Leek, and where it is valued at its worth as an ingredient of soups, stews, &c. There the occupier of, it may be, but a rod of ground brings to bear upon his Leek trenches so much skill and enthusiasm as to attain a result shaming that of those of vastly higher pretensions.

In Leek culture size is the all-important object sought—a stout stem well blanched. This can only be attained by high culture, affording rich soil and very liberal treatment during growth. The practice of some is to raise their plants in gentle heat as for Celery, and transplant to well-manured trenches, and dose frequently with manure water, and blanch with soil as for Celery. This plan answers well; but I find a result almost if not quite equal at a considerable lessened entail of labour, by sowing the seed the first open weather in March in drills 18 inches apart on ground that has been trenched and heavily manured in autumn, and thrown-up roughly for the

winter, and thrown level in February, giving a dressing of well-decayed manure and wood ashes, pointing-in a few days prior to sowing. Some fine wood ashes are sprinkled in the drills after sowing, and the seeds are sown rather thinly. Hoeing is practised to keep down weeds, and the plants are thinned to 3 inches apart, and then to 6 inches, leaving the strongest each time, and every other plant is removed as required for soup, the plants being left 1 foot apart in the rows, and after May liquid manure is poured between the rows, blanching being effected by ashes, sawdust, or cocoa refuse. For general purposes I sow in rows 15 inches apart, thin to 6 inches apart, take out every other plant as required through the summer, and do not blanch.

Henry's Prize Leek has been looked upon hitherto as the finest sort, it and Ayton Castle Giant having probably still the longest and cleanest stem; but Carentan last year had a stem twice the thickness but shorter, appearing a giant Musselburgh, and as like in growth as two Leeks not having the same name can be, and this is probably the best kind for general purposes.—A. G.

WAR WITH INSECTS.—No. 2.

Now is the time to wage war with outdoor insects as well as those inside, while they are comparatively scarce and not very active. Wait another month and it will take three times the amount of labour to exterminate them, while the result will be less satisfactory. Depend upon it, their head quarters are not far from the places which they visited last summer. Crannies of walls, old shreds, and spaces between fruit buds and branches are favourite winter resorts for them. With the aid of a microscope they may be seen there now, though perhaps quite inactive; but a few sunny days of spring will bring them out in strong force, and trees which appear clean and healthy one day may the next day be seen swarming with red spider and aphid. It is too late then to attempt a cure, for no strong measures can be taken till after the flowers are set, and by that time the new foliage will have received such injury that it will remain crippled and curled, and keeping it clean then is out of the question.

Trees which are very subject to insect attacks, as Peaches, and the like, should always have the old shreds removed and burned, or at least scalded, and the walls to which the trees are trained should be dressed as well as the trees. My plan for dressing them is very simple, and I have not yet seen anything so effectual. It has been described before in your columns, but perhaps it is worth repeating. Some fresh-burned lime is procured, and a little of it put into a tub with some warm water; a little sulphur—about a handful to a quarter peck of lime—is sprinkled on the top, and while the lime slakes the sulphur is dissolved, and sulphuret of lime is produced. Soot or other harmless colouring matter is used to produce the colour which is least objectionable (for mind, it is a fixture when it gets on to the wall, and also on the trees till growth removes it), and the mixture is left in the consistency of mortar till required for use, when more water is added to make it about the consistency of thick cream. It is then strained and applied with a syringe all over the walls as well as the trees. All old shreds are of course removed before this, and the trees if possible are completely trained afresh; at any rate they are nailed sufficiently to support them.

But someone will say Peach trees are not pruned till their buds are far advanced, and then they will not bear this dressing. Well, those who still prefer such late pruning, against all reason and the best teaching, must still go on crippling their trees with the knife at the most critical time, and keep up their stock of insects to do the rest. My trees of all sorts are pruned by the middle of January. They ought to be done by the middle of December, but I am not often able to manage it. If an insect or an insect's egg escapes with its life the dressing I recommend it will be unusual. Standard trees are dressed in the same way. A dozen old Apple trees, infested with American blight so badly that the thought of destroying them was entertained for a time, were well syringed only once in winter with this mixture, and the following season only three or four little patches could be found which had escaped. It also thoroughly eradicates moss and lichen from the stems; and bullfinches, if they are not very hard up, will not touch the buds.

I do not like syringing wall trees daily, as many people do in summer. I fail to see the use of it. It takes up much time when time is valuable, and it often does a great deal of injury

to the trees, especially on the afternoon of fine bright days when the walls have been heated to a great temperature by the sun. The water is always colder than the walls, and the rapid evaporation and consequent chill produced must be very injurious to the trees. I suppose the only thing that can be said for it is that it knocks off insects, and perhaps some of them may be hurt by the fall. A much better plan, in my opinion, is to syringe once or twice during the growing season with water in which soft soap has been dissolved, about two ounces to a gallon. This should be done in the evening after the sun is off; then it will not harm the trees any more than clear water would, and it will prevent insects attacking them. Soft-soap water is also an effectual cure for mildew on Peach trees, much more so than sulphur.

The syringe, although a very useful instrument when properly used, I believe does a great deal more harm than it does good in the hands of the unskilful, while many who are not unskilful use it far too much indoors as well as out. At the time of closing a forcing house on a hot bright day, when evaporation has been excessive, the syringe is invaluable for dewing over the foliage of plants and moistening the atmosphere of the house, so as to check evaporation for a time till the plants recoup themselves; but the house should be perfectly closed first. The water should always be a little warmer than the house, and should be applied to the plants in the form of fine spray only, for hard syringing will injure all tender plants.

Syringing in dull weather is not required, the comparative low night temperature that most successful growers now maintain does away with the necessity for it, for when the temperature rises naturally in the morning a natural dew is also produced, far better than any syringing can do it.

The syringe is fondly believed in by most people for encouraging Vines and other plants to break regularly and freely. This is a delusion; I have proved repeatedly that it makes no difference at all to them. I never syringe Vines at all, nor forced Peach trees till after the flowers are set, when they are occasionally dewed over at closing time. What is the use of painting Vines, &c., over to kill insects, and then immediately wash the mixture off with a syringe? The regular starting of Vines depends on the wood being ripe, the roots comfortable, and a comparatively low temperature.—Wm. TAYLOR.

HARDY CYCLAMENS.

I AM much obliged to "R. C." for his remarks on Cyclamens, but I think much yet requires explanation. I have a hardy white-flowering one, which blooms every year most profusely about August without any foliage, and like "R. C." I have sometimes surrounded it with leaf mould in the hope that it might bury its seed vessels and send up a batch of seedlings, but I have never been able to obtain any, although the greenhouse species that we plant out upon a sunny border the latter end of April or beginning of May seeds and reproduces itself most abundantly. Whether it is by the hardy species blooming too late for the seed ripening or not I cannot say, but I partly suspect the young seedlings fall a prey to slugs, which abound very much where the plants are grown. Yet we know that the Cyclamen hederifolium is a native of this country, and as such reproduces itself in the usual way; but unquestionably it has its favourite nooks and corners. I remember once on visiting a garden of some note in Cornwall, being shown an edging to a walk in the kitchen garden of Cyclamens that were just putting forth their leaves. This was about the 1st of September, and I understood they had been established there some years. I think they were the same kind that is grown in greenhouses elsewhere, but this is not the hardy one I inquire after.

Might I ask if there is in reality more than one hardy species, and if so will someone describe where they respectively bloom? If the hardy species I have alluded to could be induced to produce seedlings, and these be taken up and potted at the time they are in flower, few plants could be more attractive in August, excelling as it does its more tender species in the multitude of its blooms. Cutting a large bulb or corm into pieces and planting them out in sandy soil is only an uncertain way of increase, so many of the "sets" not growing; but I yet hope to see the Cyclamen as plentiful as the Primrose, if the right way to manage it were only understood.

The greenhouse one was many years an inhabitant of the shelves of that structure, without being regarded as anything

more than a botanical specimen, until the last ten years or so has brought it out into the prominent position it now occupies; and cannot something of the kind be done for the hardy species? As I said before, I am yet in doubt about there being really more than one hardy species and one tender one, but the great diversity of form which the latter has taken, and the countries from which it was imported, has led to more names being given to it than are required. This, I think, is all but generally acknowledged by botanists, and if so, what do they say about the hardy species? Will someone be pleased to describe to us the one from the other, and the proper name for each?—J. R.

OLD TREES—PRUNING GOOSEBERRY BUSHES.

I HAVE this week seen a tree that I backheaded three years since; in this case, a Jargonelle Pear on a wall. I had not much faith that it would ever make a good tree again, for it was much cankered, but it has quite succeeded. It has made plenty of healthy wood, and although there are no fruit buds visible there are many promising-looking spurs. I may add that I cut each branch off about 18 inches from the main trunk.

And now I wish to say a few words about Gooseberry trees. Many men who call themselves gardeners seem to have no idea of keeping a full-sized tree to a convenient height, except by cutting all young wood down within an inch or two of the base. I took charge of a plantation that had been pruned or rather clipped on that system. There was no fruit on the bushes, and I was told there had not been any worth mentioning for years. My employer told me to uproot them and plant young bushes, but I begged to be allowed to try them one year myself. I shall never forget what a job I had with those trees the next winter. They were crowded with short dead bits and strong young shoots. I left some of the young wood, shortening the shoots about two-thirds, and all the rest I clipped off, not cut. The following summer a lady came on a visit. She looked round the garden, and then came to me and said, "Well, gardener, I have been here every summer for fifteen years, but I never saw such crops before, especially of Gooseberries." And truly their burden was greater than they could bear. Why should so many try to grow a few big Gooseberries? If they would aim at a medium size and large quantity they would give and find more satisfaction.

In conclusion, I do not believe in anything in the way of shears for pruning Gooseberry trees, whether they be called *scissors*, or what are termed here *guillotines*, which are supposed to give a clean cut but in reality do nothing of the sort. They are often spoken of as being more expeditious than a knife, but I can do more work with a good knife and a strong pair of leather gloves, and I am certain the work will be better done than by clipping.—J. J., Lancashire.

DALECHAMPIA BOEHLIANA BOSEA.

FAVOUR of propagation, easy culture, free blooming (even when the plants are only a few inches high) during the winter months, long endurance of the flowers in beauty, and delicate sweetness, are some of the recommendations of this plant. It is, however, as well to say that the flower is a lump of yellow disposed at the internal base of the two large rosy pink bracts which guard it, and it is on these floral bracts that the beauty of the flower depends. It has besides the fine floral bracts alluded to, which it produces from the axil of every leaf, rather long, deep green, wavy, oak-like foliage, which hangs down so as to cover the stem. Altogether this is a very easily cultivated and desirable stove plant. It seeds very freely, and requires to be watched when approaching ripeness, as the capsules burst and the seeds are distantly distributed. Wherever falling they are certain to grow, and the plants come up with me in sea gravel, in tan, and in the soil of pots containing other plants, and is simply a stove weed.

The seeds should be sown at the present time in a hotbed, and the seedlings potted-off singly into 3-inch pots when they are large enough to handle. The plants should be grown-on in brick moist heat, and be kept near the glass with a moderate amount of air. They usually commence flowering in January, and will continue to do so for some time. The plants should be shifted into 4½-inch pots when they have filled the 3-inch pots with roots; but I keep some in the 3-inch pots, as I find these plants very useful. A compost of turfy loam, with a third of leaf soil and a little old cow dung, grows them well. They

require to have the soil always moist and to be freely watered during growth and flowering, evidently refreshing a syringing twice daily, morning and evening.

The plants will continue to grow and flower for a number of years, requiring only to be potted in the spring of each year. I have plants now of nearly seven years' growth which are kept in a free-flowering state in 7-inch pots, the old soil being removed at each potting, so that the plants may be returned to the same size of pot. Weak liquid manure twice a week invigorates the foliage and flowers.

If the flowers be removed after they fade (the capsules fall so as to be hid amid the foliage), and the plants be kept from seeding, their flowering will be much enhanced. The rosy pink bracts of this plant make neat button-hole flowers.—G. A.

NOTES AND GLEANINGS.

A NOTE ON MR. ORMSON'S ESTABLISHMENT at Stanley Bridge, Chelsea, will not be inappropriate. The place is historical as well as horticultural and commercial. Mr. Ormson's residence was once in part the mansion of King Charles. The bole of the tree is preserved which that Monarch is said to have planted. The front of the "Royal" residence which was once the garden is in some sort a garden still, being occupied by glass structures of various designs, such as the roof conservatory, curvilinear (straight glass) portable vinery, span-roof and lean-to houses. The garden "decorations" consist of boilers in every conceivable shape and size—saddles, simple, divisional, corrugated, convoluted, perforated, and arterial; there are also conicals, pyramids, Trenthams, and tubulars. Mr. Ormson has been "getting-up heat" for more than a quarter of a century, and has instituted many improvements in hot-water engineering, the latest being the patent tubular Cornish boiler, the patent divisional hot-water apparatus, and the patent arctic hot-water stove, designed for ships and schools.

—AN excellent specimen of *ODONTOGLOSSUM ALEXANDRE* is now flowering in the stove at Wimbledon House. The plant has thirty-three expanded blooms on three spikes and is very beautiful. There is also an unusual form of *Anturium Scherzerianum*, the flower having a double or twin spathe, the spathe being single. We have observed before that healthy specimens of the "Fleming" Plant have occasionally perfected a "pair" of "wings."

—MR. FOULIS, gardener to G. H. Henderson, Esq., Ffordell, Fifehire, has been awarded the NEEL PRIZE, value £54, for his abilities as a gardener and geologist. The prize is the triennial interest of £500 left by the late Patrick Neil, Esq., to be awarded by the Royal Caledonian Horticultural Society to some distinguished botanist or horticulturist. Mr. Foulis is to be congratulated on the honour which he has won.

—WE hear a rumour—which we think not unlikely to strengthen into a more certain sound—that the scheme for REMOVING THE OXFORD BOTANIC GARDEN from its present historical and picturesque site to the bleak and arid "parks" has fallen through, and that immediate steps are to be taken to put the existing establishment on an efficient footing.—(Nature.)

—WE are informed that *LAPAGERIA BOHEA* is hardy in Cornwall, and that it has been seen covering a wall having a north-west aspect. It would be interesting to hear if experiments have been made testing the hardness of this fine climber.

—THE King of the Belgians is erecting at a cost of £80,000 a GRAND WINTER GARDEN at Laeken. The structure is of imposing dimensions, the roof being 120 feet in height in order that tall trees may have room for development.

—FOR EXTERMINATING MEALY BUG, writes a correspondent in the *Rural New Yorker*, I have never found anything so good as alcohol, or even common high-proof whisky will do. With a small soft brush one can soon clean the bugs from a hundred plants, no matter how badly infested. Dip the brush into the alcohol, and then let a drop or two fall upon a cluster of mealy bugs, and they will disappear. There are some very delicate kinds of plants which the alcohol will injure if used too freely; but there is not much danger in its application to the ordinary kinds cultivated in greenhouses.

—*TAMARIX PLUMOSA*.—Nothing can be finer or more graceful than this species, which is still so rare in spite of the readiness with which it can be propagated. Its numerous

slender branchlets of a glaucous green hue bear a certain resemblance to the curled plumes of the ostrich (or the white stork), whence its popular name of "Marsh-stork." It flowers in August about the same time as *T. indica*. The flowers, which are disposed in dense erect panicles, have an airy lightness, which adds much to the elegance of the foliage. Isolated on a lawn or in a large park *T. plumosa* forms a compact mass of the most pleasing appearance. It is quite as hardy as *T. indica*, and propagated and treated in precisely the same manner.—(Revue Horticole.)

—A CORRESPONDENT in the *English Mechanic* recommends the following mode for making TARRED WALKS:—First gravel the walk in the ordinary way, but do not give it so thick a coat as usual; beat well down to make a perfectly smooth and even surface, which coat well with tar. When this is done put the final layer of gravel on the top—three-quarters of an inch to 1 inch will be quite sufficient, and again beat down, using the back of a spade for the purpose. The walk so prepared must not be trodden upon for two or three days, at the end of which time it will have become perfectly hard, and will not be affected by the heaviest fall of rain. The work must be done in fine weather, and the plan will be found better than using cement mixed with the gravel.

—MR. DUNSTAN, Coroner, at the Parkside Asylum, Macclesfield, has been investigating a case of poisoning of an unusual nature. A patient, Emma Linnell, died apparently in an epileptic fit. A *post-mortem* examination was held, resulting in finding in the stomach of deceased some green fluid, also Holly seed and fragments of Holly, Laurel, and Yew leaves in quantities sufficient to cause death, and a verdict was returned in accordance with the evidence.

—THE HORTICULTURAL HALL, at the approaching Centennial Exhibition to be held at Philadelphia, is an imposing structure, with a length of 383 feet, and width of main building 198 feet. Its height is 72 feet to the skylight. The Centennial Conservatory, 280 by 80 feet and 55 feet high, occupies the main floor, and in this the exhibition will be made. On the north and south sides of the principal room will be the forcing and propagating houses, each 100 by 80 feet, covered with a curved roof of glass and iron. Similar vestibules occupy the east and west ends, and by the side of these are rooms for offices, &c. Ornamented stairways lead to the interior and exterior galleries of the conservatories. These latter are 10 feet wide. The entrances at the east and west ends will be approached by flights of blue marble steps. The basement is fire-proof and used for storehouses, cool room, kitchen, and heating apartments. The entire building will be mainly of iron and glass, and is intended to remain after the Exposition as an ornament to Fairmount Park and a patriotic memorial of the first Centennial Celebration of Horticultural Progress.

—A CORRESPONDENT in the American "Gardener's Monthly" says, "You will be doing many a poor fellow a great kindness if you will again warn and keep warning against the fatal mistake of painting hot-water pipes in greenhouses with GAS TAR." We have lately had brought to our notice an instance of a nurseryman near London, who tarred the stage of a large plant house to the great and probably irreparable injury of many valuable plants which were afterwards wintered in the house.

—HARDENING PAPER.—The French papers speak of a method of rendering paper extremely hard and tenacious, by subjecting the pulp to the action of chloride of zinc. After it has been treated with the chloride it is submitted to a strong pressure, thereafter becoming as hard as wood and as tough as leather. The material may be employed in covering floors with advantage, and an excellent use for it is large sheets of roofing. Paper already manufactured acquires the same consistency when plunged unsized in a solution of the chloride, and is useful for many protective purposes.

THE ARRANGEMENTS OF COLOURS

IN THE BEDS OF THE LONDON PARKS AND GARDENS.—No. 7.

EXAMPLES having been given of suitable modes of effectively planting circular beds, a few designs suitable for beds of an oval form may appropriately follow. Round beds are the most common of all forms; they are also adaptable to an almost endless variety of modes of planting them, and if the plants are judiciously selected, and their colours correctly arranged, few, if any, forms of bed show to better advantage.

The plans which have been submitted are sufficiently numerous to meet various tastes, and also as embracing or providing for the employment of the several plants which are usually prepared for this mode of decoration.

Oval-shaped beds are less numerous than round beds, but are equally effective when properly planted. Two suitable

and free bushy-growing plant, having silvery grey foliage. Its erect habit of growth makes it desirable for lines in mixed beds. It is propagated from seeds or cuttings in autumn or spring; the autumn cuttings strike freely in a cold frame or under a hand-glass. In spring it is best to place the plants in a little heat, and then the shoots that are made will strike freely.

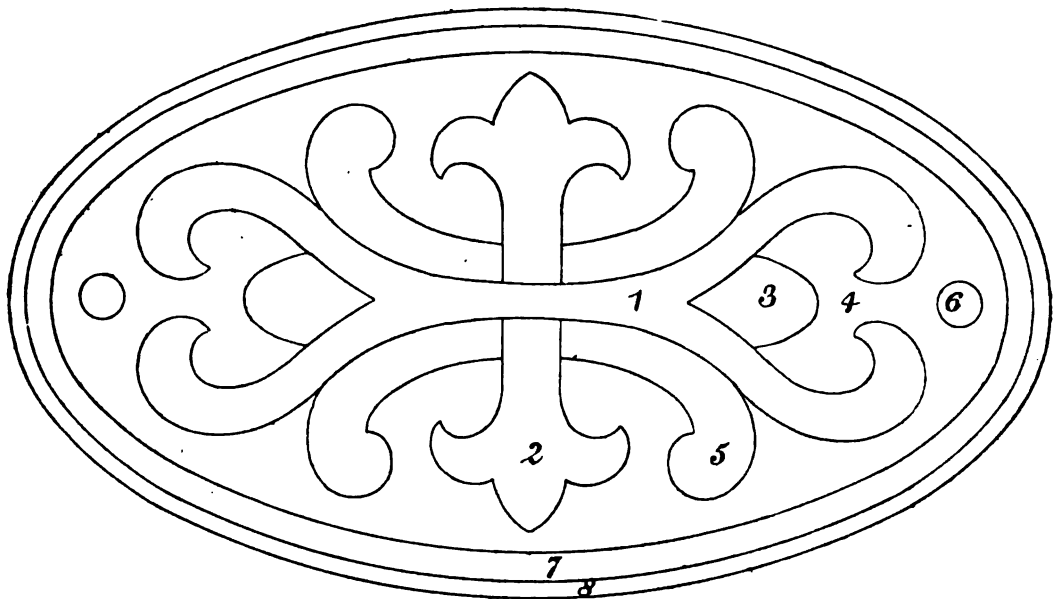


Fig. 36.—Bed K.

and distinct modes of planting an oval-shaped bed are now figured; they are quite different in character, and have an agreeable appearance. Three other plans of planting beds of this shape will follow, which will afford ample choice for intending planters.

BED K.

1. *Geranium Robert Fish*.—This is a very dwarf and compact variety; the foliage is pale yellow, the flowers bright

4. *Alternanthera amabilis latifolia* (orange and red).—A bold, strong-growing, and showy variety, enduring alike in rain or sunshine. It may be used in any exposed situation, and will maintain its bold and dense character until late in the autumn. Last season it remained in perfection in Hyde Park until November. It is a superb plant for designs, and it may be used in other ways with great advantage.

5. *Lobelia Blue Stone*. 6. Silver variegated *Geranium*.

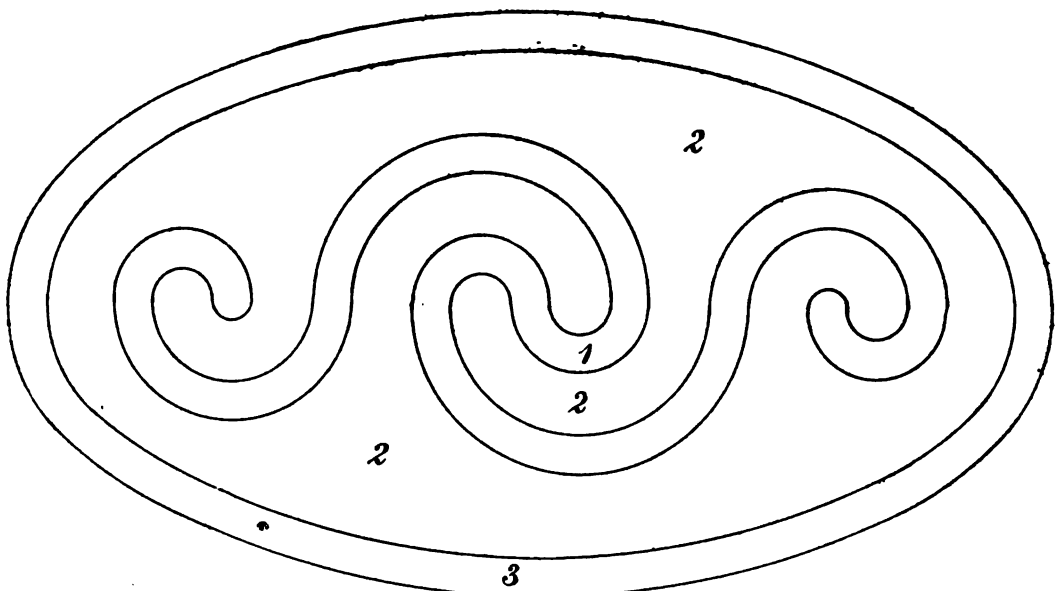


Fig. 37.—Bed L.

scarlet. It is a free bloomer, distinct, and beautiful, and very effective for lines in ornamental beds.

2. *Cineraria maritima compacta*.

3. *Achyrocyline Saundersonii*.—This is a very distinct, neat,

7. *Echeveria secunda glauca*. 8. *Stellaria graminea aurea*.

BED L.

1. *Golden Pyrethrum*. 2. *Alternanthera amosa*.

3. *Helichrysum maritimum*.—This is a comparatively new

plant, and is excellent for a margin to a bed of dwarf plants. The small leaves are glossy and shine like grey satin. It is a creeping plant, forming itself into a neat and compact border. It is one of the most desirable and effective plants we have for edgings. It propagates itself, and will keep well in a cold frame.—N. COLLE, *Kensington*.

OUR BORDER FLOWERS—DAME'S VIOLET OR ROCKET.

A RACE of plants consisting of annuals, biennials, and perennials, some of them having found their way to our shores from the continent of Europe and other countries hundreds of years ago, and in all probability occupied prominent places in our borders in days gone by, before the rage for novelty had set in. One of these is enumerated as a native of our own land, but I doubt its claim to nationality; at all events we have it, and a right welcome guest it is.

Hesperis matronalis in the spring and summer time is a worthy occupant of our shrubby borders, by the margins of ponds, in wilderness scenery and out-of-the-way corners, and when once established it only requires to be left alone to take care of itself. In sheltered nooks it gives us in the spring a good addition to the bouquet, its pleasing perfume being always acceptable to our sense of smell, and is one of its greatest attractions. Glowing colours are attractive, but when combined with delicious perfume they become doubly interesting. Then we have the double *Hesperis matronalis* in several varieties, often taxing the cultivator's skill to the very utmost to keep-up a stock of flowering plants. It is useless attempting their cultivation if we do not make-up our minds to succeed with those gems of our borders. Perseverance must be our motto and success our aim. We must be prepared for disappointment too.

I find it good practice to have plants in reserve in a rather shady and moist but not a wet situation, not suffering them to bloom when stock is required, and dividing them when they have made moderate growth. They should have efficient drainage under all circumstances, and be supplied with water as they require it. They should be carefully watched when they are making their growth, for belonging to the Brassica tribe they are often attacked by what is known as the Turnip fly, this pest often destroying the young growth by eating-out the heart of the plant. A good sound loam with thoroughly decomposed manure, charcoal dust, and a little coarse sand will meet their requirements. In an open border, and if left to themselves, they are but short-lived, often requiring renewing. In some places it is almost impossible to succeed with them, but when their requirements are supplied they become more manageable. When at their best no plants are more attractive, none more esteemed than our old-fashioned Rocket, or, as some call it, "Evening Star"—and stars the flowers are. Prizes ought to be offered at horticultural exhibitions for collections of those neglected flowers.

They are increased by cuttings and division. When the best of the bloom is past the stems should be partially cut-down to encourage growth. When they have made moderate growth divide in autumn, potting or planting the divisions as may be desired. When the flower stems rise they should be secured from being injured by the wind.—*VERITAS*.

ROAD-MAKING.—No. 2.

In continuation of the subject of road-making alluded to on page 83, it may be stated that where the ground is impervious to water means ought to be taken to make the foundation as dry as possible, which can only be done by putting in plenty of drains and insuring their having good outlets. These drains need not necessarily be deep. Many years ago, in making a carriage road through a piece of stiff ground a very slight excavation only was made, but it was depressed in the middle, both sides sloping down to the centre, and a tile drain was inserted there about 18 inches below the surface where the two slopes met. This 18 inches was filled with rough stones; the foundation of the road was pared smooth, and kept so by not allowing the wheels to touch it until it was covered with stones, and thus a very good road was made. In like manner a larger space may be done in the same way by the ground being formed into a series of ridges and furrows with drains in the latter—that is, where more especial care is required to lay the ground dry.

Although the above is likely to be effectual, it is a good practice to roughly pave the bottom of the road before the

small stones are laid on, which is best done when rough, flat, irregular-shaped stones abound—say, in pieces 8 or 10 inches across and 3 or 4 inches thick. The surface ground being ready, these stones ought to be placed by hand closely adjoining each other and on their edges, leaving the upper surface as rough and irregular as possible, as this unevenness helps to catch hold of the loose small stones that follow, while the paving, if it may be so called, acts as an additional drainage. The bottom stones may be soft if necessary; in fact I am not sure but that sandy stones are best. They are always expected to be below the action of the wheels, and consequently only serve to keep the road dry. It is always best to insure good workmanship at the first, disturbing a road afterwards never ought to be necessary. Either of the plans described above, or it may be both of them, had better be adopted where the case seems to call for it. Provision for gas and sanitary drains ought always to be thought of when a road is being made. If the basement stones are packed on their edges rather than merely tumbled in out of the cart or barrow, the after material adheres better to them, and there is no likelihood of their getting loose and finding their way to the top, which large stones are liable to do when merely mixed with small stones, and especially when the surface-coating of broken stones is a thin one.

Besides stiff clayey ground alluded to above there is another kind still more difficult to manage, and that is the peat moss. I recollect a piece of such road that used to vibrate very perceptibly when a heavy load passed over it, and yet the road was a good one: its foundation no doubt rested on a good covering of Gorse, Heath, or bushes, which was the usual way such difficulties were met. I have on more than one occasion had recourse to these substances to form a bottom in a very wet place, and it is surprising the saving there is in stone; besides which the road is unquestionably better, and there is no likelihood of materials so buried decaying in any very early time and letting the road through. I have seen a piece of road altered that was known to have been built on Thorns, Brambles, &c., and at the expiration of nearly ninety years only the smaller twigs were decayed. The road-maker of the present day who has any particularly wet or dirty place to encounter cannot do better than cover it first with Gorse, Heath, bushes, or branches of any kind, and over them he may lay the stones. I remember once having a particularly soft place to encounter, and the soft watery mud seemed determined to make its way up through a moderate layer of nice short Gorse that was carefully laid over it all in one way; but when we gave it a covering of the same substance in a contrary direction it stopped the propensity the soft spongy matter had to rise and a very good road was made; but of course where it is practicable it is better to drain all such places.

The above being about the worst place to form roads upon, let us take a glance where the object is attained with the least trouble and expense. We shall find that in some dry stony districts a road is about half formed already to our hand, and it requires but little labour to complete it, the natural dryness and hardness of the bed being such as to require few stones to make a really good road. Sand is a bad foundation, and ought to be made dry first of all; but there are dry sands that cannot be excelled by anything, and I am not very sure but a builder would as soon select a good dry sand on which to erect a castle or a church as any other foundation he could have. Sand of this nature makes a dry road, perhaps too much so, as rounded gravel is unwilling to bind upon it. Clays of some kind or other are the most common, and if divested of all superfluous water will carry a good road, the great matter being both to drain the bottom well and to arrange that no water stands on the top. The latter is best guarded against by the quality of the material used in the road and the prevention of overhanging trees. Plantations and high hedges on each side exercise a hurtful influence on roads. This work, like most other operations, is governed by *£ s. d.*, and the expenditure need not be very great if the work be gone about in the right way.—*J. ROSSON*.

SOIL FOR RHODODENDRONS.

My experience is that these handsome shrubs will not thrive where the soil is shallow and overlying limestone or any other rocks. They need the steady uprising moisture of the earth, which rocks impede. They delight in vegetable matter, and grow well in the loam of woods, but will not do so in that of open fields. I allude to a limestone district. I have planted them in nearly all sorts of soil—clay, sand, loam, and peat in

old woods and plantations—and they have grown as freely as any other shrubs or trees, and much more freely than most, for rabbits must be hungry indeed before they will eat *Rhododendrons*. But they have failed to grow in the ordinary soil of the garden, first because it was deficient in decaying vegetable matter, and secondly because of the dryness of the subsoil.

In sandy loam and having a moist base *Rhododendrons* grow perfectly. In the vicinity of Manchester, for instance, few shrubs flourish so well as do these. They will grow also in clay, but are slower in becoming established than in lighter soil. They are susceptible of great injury by digging amongst the roots; and after planting them, no implement working deeper than the hoe should be used amongst them. I am convinced that that and a moist base is of more importance than the staple character of the soil.

In the gardens lately in my charge, situated in a dry limestone district, *Rhododendrons* could not be made to flourish except by deep excavations and introducing vegetable matter, peat being preferable, but in the woods and plantations on the same estate they are growing by hundreds in peat, loam, and clay. In my opinion they are moisture-loving plants and will not thrive well on a dry subsoil, let the surface soil be of whatever nature it may.

With a moist base and deep soil, whether of loam or peat, I should not hesitate to plant these shrubs freely, and by not digging amongst them I should expect them to flourish, but I have never seen them grow freely in shallow soil on a substratum of limestone.—A FORESTER.

PERENNIAL ASTERS.

ASTERS are capable and worthy of a much more liberal and scientific treatment than even the best that can be done for them with the spade. The *Phlox*, when treated in the rough and ready way in which *Asters* generally are, is but a sorry decorative plant as compared with that which is grown from a cutting annually and cultivated with some liberality; and so with *Asters*, which are susceptible of exactly the same treatment. A single cutting of an *Aster* struck in a mild hotbed in spring, may be made a much more beautiful object in the autumn than a considerable clump of the same with its multitude of stems tied up as they usually are to a single stake, with no better result than that of strangling the development of a large number of them. Some sorts are better adapted for being grown single-stemmed than others, but all the late-blooming sorts are improved by being annually raised by cuttings. Those that have the finest effect when grown in this way are such as develop their inflorescence in pyramidal form and which branch freely from the lower part of the stem upwards, those blooming only on the upper part of the stem in paniculate or corymbose style being less elegant; yet for certain positions, such as where they are designed to overtop masses of low-growing shrubs with their bloom, they are most desirable. In the herbaceous border, where every plant is, or should be, seen apart from its neighbours, the pyramidal sorts are extremely elegant and beautiful; so much so, that I strongly urge a trial of the method on all who desire to have the best of everything in its season. The treatment of the cuttings is precisely the same as is given to cuttings of *Phloxes*, with this difference, that they are more easily spoiled by heat, and should therefore never be coddled up in any way. They must be planted out as soon as they are thoroughly well established, the ground being previously well dug and manured if poor. One plant only, or three or four, may be planted together according to degree of massiveness and bulk desired; and should they throw up any suckers or stems from the root, these should be removed at once so as to concentrate the whole vigour of the plant on the development of one stem. Support the stem properly as it advances in growth. The following list comprehends twenty of the best sorts for decorative purposes, and the earliest and latest bloomers.

A. alpinus.—A neat, compact, dwarf plant, growing about 9 inches high, best adapted to rockwork, and for the front line of a mixed border. The flowers are solitary, very large and bright, but rather pale purplish blue, opening from May till August. Native of mountain pastures on the Alps and Pyrenees. There is rather a beautiful but rather rare white-flowered form of this plant that is very desirable.

A. altaicus.—This is also a dwarf-growing species, with very large bright mauve-coloured flowers, blooming very freely in July. Native of the Altai mountains.

A. concolor.—Another dwarf neat-growing sort, with simple

erect stems, terminating in raceme of deep purple flowers at the height of a foot or 18 inches. It blooms continuously from August to November. Native of North America.

A. discolor.—A very neat and effective sort, growing about 18 inches high. The flowers open white, and change to pink or reddish purple, and are produced in corymbs on the upper part of the stems. They appear in August and September. Native of North America.

A. amellus.—This species grows about 2 feet high, with erect rigid stems, generally unbranched till near the top, where they break out into an open corymb of pale blue flowers, which appear in August, September, and October. Native of Central and Southern Europe.

A. blandus.—This species grows from 2 to 3 feet high, with the stems numerous branched in pyramidal style, bearing a profusion of pale purple flowers in October and November.

A. dumosus.—An upright-growing sort, with stiff freely-branching stems, furnished almost from the base to the apex in pyramid shape. The flowers are produced in the greatest profusion, and are white, but small, opening in September and October. Native of North America.

A. elegans.—This sort grows about 2 feet high, branching gracefully and freely. The flowers are produced very abundantly from August till October, and are bright purplish blue. Native of Siberia.

A. ericoides.—One of the most elegant of the group when properly managed as to staking, &c. It grows about 3 feet high, branching most freely from the base upwards. The flowers are small individually, but in the extreme profusion in which they are produced they are most effective. The colour is white, and they open in September and October, and in northern places last till November.

A. grandiflorus.—This species grows about 3 feet high, and branches freely in pyramidal fashion. The flowers are deep blue or purple, and open in October and November. The flowers are large and fine, but the late period at which they open renders it a plant ill-suited for northern or cold late places, except when a position at the base of a wall with a southern exposure can be devoted to it. Native of North America.

A. levis.—A handsome bright blue-flowered species, growing about 2 feet high. The flowers are produced in corymbs, and open in September and October. Native of North America.

A. longifolius-formosus.—A remarkably beautiful sort, growing about 2 to 3 feet high, with fine bright rosy-red flowers. The species *longifolius* is a comparatively uninteresting one with whitish flowers in no way comparable with this variety, which is one of the most ornamental and pleasing of *Asters*.

A. Nova-Anglia.—One of the handsomest and most effective of *Asters* as regards its flowers and inflorescence, but rather too tall and weak in the stem to be considered tidy and pleasing in habit. The stems rise to the height of 4 or 5 feet, terminating in large open panicles of bright violet-purple flowers which appear in September, October, and November. There is a very fine and distinct form of this species named *ruber*, which has the flowers, as the name implies, red—a fine bright red—which in other respects is identical with the purple-flowered species. Native of North America.

A. Novi-Belgii.—This grows about the same height as the last, but the flowers are rather smaller, and pale blue with a conspicuous yellow disc. The flowers appear in September and October. Native of North America.

A. puniceus.—This species grows about 3 feet high, with stout stems terminating in an open corymb of purple flowers, which open in September, October, and November. Native of North America.

A. paniculatus.—A fine large-flowered species, rising to the height of about 4 feet, the stems branching freely at the top, and forming an open panicle of bright blue flowers, which open in October and November. Native of North America.

A. patens.—A dwarf-growing species, about 18 inches high. The flowers are produced in open panicles, are deep purple, and appear in September and October. Native of N. America.

A. sericeus.—A very distinct and pretty species, with somewhat stubby stems branching freely, each branch terminating in a solitary large fine blue flower. It grows about 3 feet high, and flowers in summer and autumn, and into winter in warm localities. Perhaps not hardy in the north of Scotland, where I have had no experience of it. Native of Missouri.

A. turbinellus.—A very handsome species, growing to the height of from 3 to 4 feet. It branches freely and flowers very profusely. The flowers are large, fine dark blue or

purple, opening in September and October. Native of North America.

A. undulatus.—This species grows from 3 to 4 feet high, branching abundantly. The flowers are very profuse, pale blue, and open in August, September, and October. Native of North America.—W. S.—(*The Gardener*.)

MILDEW AND RED SPIDER SUBDUED.

MR DOUGLAS asks what is to be done if red spider appears on the Vines, for if you put sulphur on the pipes he is afraid the fruit would be rusted. Now what I have to impart is not new, but is not so well known as it should be. It answers no good purpose to paint the pipes with sulphur, but the reverse. It is sulphureted vapour in the atmosphere which we want to destroy both red spider and mildew; dry sulphur does no harm to either.

If at the time of closing the house Mr. Douglas will place a pail half filled with cold water in the vinery or any other house affected with spider or mildew, and take half a pound of sulphur and mix it up in a basin with boiling water till it is quite made into a paste, then mix it in the pail with the water, then place in the mixture some lumps of unslacked lime, he will create a vapour that will destroy both red spider and mildew without injuring the most tender plant. If the house is a large one two pails will be better than one. In the morning the spiders will be found dead in their webs, or if not, the vapour has not been strong enough; but in any case it will be well to repeat the dose a few nights after to destroy the offspring that were in the eggs at the time of the first operation. I keep the unslacked lime on the boiler, for if not kept dry it will go down and be of no use.

For thirty-six years I have not been troubled with spider or mildew on my Peach walls, but both pests had been very troublesome to my predecessor. After the trees have been nailed I mix 6 lbs. of sulphur and tone it down with soot and apply it on the wall with the syringe or engine. I put it on thickest at the bottom of the wall for the vapour from the sulphur to ascend amongst the foliage. After the fruit is set, on a fine sunny afternoon when the wall is still warm, I syringe with milkwarm water; the vapour will spread itself over the whole wall. I do this two or three times a week on fine days. Syringing the tender foliage of Peach trees with cold water is a sad mistake, too often practised I am sorry to say.—J. C., Felton Park Gardens.

HISTORY OF THE LUCOMBE OAK.

[We have been favoured with a copy of a letter from John Zephaniah Holwell, Esq., F.R.S., dated from Exeter, February 22nd, 1773.]

SIR,—In my rambles through this city I have been tempted to visit the nursery of Mr. W. Lucombe, of St. Thomas, on the report of a very extraordinary and new species of Oak, first discovered and propagated by that ingenious gardener; and as this plant appears to me capable of proving an inestimable acquisition to this kingdom, I cannot resist the desire I feel of communicating to you some particulars relative to its history and character.

About seven years past Mr. Lucombe sowed a parcel of acorns, saved from a tree of his own growth, of the iron or wainscot species. When they came up he observed one amongst them that kept its leaves throughout the winter. Struck with the phenomenon, he cherished and paid particular attention to it, and propagated by grafting some thousands from it, which I had the pleasure of seeing eight days ago in high flourishing beauty and verdure, notwithstanding the severity of the winter. Its growth is straight and handsome as Fir, its leaves evergreen, and the wood is thought by the best judges in hardness and strength to exceed all other Oak. He makes but one shoot in the year—viz., in May, and continues growing without interruption; whereas other Oaks shoot twice—viz., in May and August. But the peculiar and inestimable part of its character is the amazing quickness of its growth, which I imagine may be attributed, in some degree at least, to its making but one shoot in the year; for I believe that all trees which shoot twice are for some time at a standstill before they make the second. I had the curiosity to take the dimensions of the parent tree (seven years old) and some of the grafts: the first measured 21 feet high and full 20 inches in the girth; a graft of four years old 16 feet high and full 14 inches in the girth. The first he grafted is six years old, and he outshot his

parent 2 feet in height. The parent tree seems to promise acorns soon, as it blossoms and forms strong footstalks, and the cup upon the footstalk with the appearance of the acorn, which with a little more age will swell to perfection.

This Oak is distinguished in this country by the title of the Lucombe Oak. Its shoots in general are from 4 to 5 feet every year, so that it will in the space of thirty or forty years outgrow in altitude the common Oak of a hundred years of age. I have a leaping pole full 5 feet long, a side shoot from one of the graft only a year and a half old. From the similarity of this Oak to those of the iron or wainscot Oak it appears to be a descendant from that species, though it differs from it in every other particular. Several gentlemen around this neighbourhood and in the adjoining counties of Cornwall and Somerset have planted them, and they are found to flourish in all soils.

PORTRAITS OF PLANTS, FLOWERS, AND FRUIT.

CROCUS WELDNERI. *Nat. ord.*, Iridaceæ. *Linn.*, Triandria Monogynia.—“This can scarcely be considered as more than a variety of *Crocus biflorus*, with which it agrees in time of flowering, leaves, and corn-structure. The flower is less showy than those of either the old garden *biflorus* or the two wild Italian varieties (*lineatus* and *pusillus*), being entirely without stripes, concolorous at the throat, and white, except that the three outer segments are marked on the outside with a more or less decided hue of slaty-purple. It is a native of the limestone hills of Dalmatia, flowering in January and February. In our English gardens it does not expand till March.”—(*Bot. Mag.*, t. 6211.)

STAPELIA OLIVACEA. *Nat. ord.*, Asclepiadaceæ. *Linn.*, Pentandria Digynia.—“This interesting species appears to have been known for some little time in gardens as *Stapelia eruciformis*, although there seems to be some doubt whether that name does not belong to another species (*Gardeners' Chronicle*, 1875, iii., p. 206). It was sent to Kew by H.E. Sir Henry Barkly in April, 1874, where it flowered in September following.”—(*Ibid.*, t. 6212.)

CYPPELLA PERUVIANA. *Nat. ord.*, Iridaceæ. *Linn.*, Monadelphia Triandria.—“This handsome Irid, new so far as I can make out, was introduced in 1874, by Messrs. Veitch, from the Peruvian Andes. It does not agree with the six species of *Cypella* described by Klatt in his monograph above cited either in habit or precisely in stigma. They are all natives of Brazil, and have spathe produced from the sides of great ensiform Iris-like leaves. Here the habit is substantially that of *Phalocallis*, *Polia*, or *Beatonia*, but in all these the stigmas are materially different. These South American Irids are very difficult to study, the flowers being so fugacious in a living state, and seldom represented in a satisfactory manner in herbarium specimens. We have in the Kew Herbarium specimens of either the same plant or a closely allied one from the temperate region of the Bolivian Andes, in grassy places, near Sorata, gathered by Mandon.”—(*Ibid.*, t. 6213.)

PESCAITORIA DAYANA var. *RHODACEA*. *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—“In the present state of Orchidology it is not possible for the botanist or the horticulturist to speak with confidence of generic limits in any considerable group. I have retained this under *Pescatoria*, following Reichenbach (in the *Gardeners' Chronicle*, l. c.), by whom the genus (usually wrongly written *Pesatorea*), was founded. As above observed, however, this genus has been referred by him to *Zygopetalum* as long ago as 1861, together with *Bolles*, *Warszewiczella*, *Warrea*, *Kersteria*, and *Promenæ*.

“*Pescatoria Dayana* has several varieties in cultivation, depending on the markings on the perianth being absent, or violet, or green, or red. That here figured was communicated by Messrs. Veitch in September, 1874, and a perfectly similar plant, but without red tips to the sepals, was sent by Mr. Bull the previous June.”—(*Ibid.*, t. 6214.)

VIBURNUM DILATATUM. *Nat. ord.*, Caprifoliaceæ. *Linn.*, Pentandria Digynia.—“A very handsome hardy shrub, with apparently a wide distribution in Japan, having been collected in various localities from Nagasaki and Yokohama to Hakodadi—that is, nearly throughout the length of the archipelago.

“*V. dilatatum* was introduced by Messrs. Veitch, who sent flowering specimens for figuring to Kew in June last, with the information that it is perfectly hardy.”—(*Ibid.*, t. 6215.)

SENECIO (KLEINIA) CHORDIFOLIA. *Nat. ord.*, Compositæ. *Linn.*, Syngenesia Superflua.—“A very curious succulent Groundsel, remarkable for the great length of its simple,

terete, cylindrical leaves, which droop from the long, slender branches, and for the lax, slender, very few-flowered cymes. It is one of Mr. Cooper's South African discoveries; he found it at Bughersdorp, in the Albert province, in 1861. It flowered at Kew in July, 1874. The specimen was presented by Mr. Kennedy."—(*Ibid.*, t. 6216.)

PEAR—Pitmaston Duchess.—"Originally this Pear was called Pitmaston Duchesse d'Angoulême, and it is figured under this name in the *Gardeners' Chronicle* (1864, 1108), where it is described by Mr. Robert Thompson. We, however, follow Dr. Hogg in abbreviating the name to Pitmaston Duchess, which is more distinctive, as, though a seedling from Duchesse d'Angoulême, it bears no resemblance to that variety. The tree, as we learn from Mr. Cramb, 'is of a vigorous habit, particularly when grafted on the Pear stock, and so fruitful as scarcely ever to miss a crop even during unfavourable seasons, whether grown as a bush, or pyramid, or standard. The fruit is generally in use from the beginning to the end of October, varying a little according to the season. The average weight is from 10 ozs. to 12 ozs., and for exhibition purposes it has few, if any, equals. The flavour is excellent, not quite so sugary as many of our autumn sorts, but still first-class; the flesh is in a high degree melting, very juicy, and perfumed. No collection should be without this desirable Pear, did it possess no other good quality than that of having a fine appearance.' The Pear was raised by the late John Williams, Esq., of Pitmaston, in 1841, and is a cross between the Duchesse d'Angoulême and Glou Morceau; he further refers to it as a very handsome and most excellent variety, and adds, 'few of the new Pears can compare with it as regards size, appearance, and quality; it partakes more of the nature of Marie Louise than of the Glou Morceau.' The fruit is described as 'very large, oblong obovate; the stalk short, obliquely attached, projecting more on one side than the other; the eye in a moderate-sized depression, the segments of the calyx erect and projecting to the level of the fruit; skin soft, smooth, yellow, with slight thin russet near the stalk. Flesh yellowish-white, exceedingly melting, buttery, very juicy, and rich.' Its remarkably tender, melting flesh, and its rich sprightly flavour and delicate perfume, are qualities in which it is excelled by few of our large-fruited varieties of Pear. Mr. Scott, who calls it Williams' Duchesse d'Angoulême, remarks that it is a noble fruit, the largest melting Pear known to him, and certainly one of the finest. He adds that it grows freely on the Quince, on which it fruited with him in 1869, on a tree two years old, and the next year, 1870, was in full flower again on trees 3 feet high."—(*Florist and Pomologist*, 3 s., ix. 37.)

ARTIFICIAL ROCKWORK.

MR. PULHAM has called me to task for my remarks about artificial rockeries. To tell the truth, I rather expected to have had my remarks criticised before this, but I do not think Mr. Pulham has at all shaken me from my position. No artificial rockery that I have ever seen has the least resemblance to Nature, least of all concrete and stucco with sham stratification. Use boulders and stones as large as ever you can procure them, and pile them up to resemble cliffs as much as possible, so as to obtain variety and massiveness, but it is utterly bad taste and cockneyfied in my opinion to try and pretend that it is a natural rock by joining the boulders together with stucco and cement, and marking out lines of stratification. No one is ever deceived by it. I know I may differ from the authorities Mr. Pulham mentions, but still I venture to do so, as I still maintain that where Ferns and alpine plants do best is among the disintegrated rocks and alpine boulders, and that it is a great chance if any one of these stones are found on their natural bed.

One of the best instances of rockeries I know is at Mr. Backhouse's at York, and though there are boulders and rocks and artificial water, yet there is no attempt to put every stone on its right bed, or to make believe that it is a natural stratified rock pushed through contrary to Nature. Of course I quite agree with Mr. Pulham, if it is wise to imitate a natural cliff it is right to put all the stones on their proper beds. I think Mr. Ingram's spring garden and rockeries quite perfect in their way, but think he is unnecessarily cramping his energies when he is using large flat stones, and arranging them artificially and unnaturally, to think it necessary to lay each flat on its bed in the original position in which it lay in the strata, for in the natural dolls formed by the disintegration of rock, and which is the nearest approach in Nature to such a garden

as that at Belvoir, the stones would not be found in their natural beds.

No doubt on the ledges and crevices of sandstone cliffs many Ferns and wild plants will grow, but it is generally in the disintegrated soil, and not on or in the stratified rock; and certainly if we want to see Ferns growing to perfection it is amongst the huge boulders and smaller detritus and stones at the feet of lofty cliffs, and by the sides of streams and water-courses, such as one sees in so many parts of Switzerland and the Italian Alps, and in a smaller way in Scotland and the rocky hills of Yorkshire.

My remarks, however, against artificial rockwork were chiefly directed against the concrete and plaster and stucco imitations, which are neither imposing in themselves nor do they impose on the public, and are certainly not adapted for the growth either of Ferns or Alpines. Nothing is worse taste in my mind than broken clinkers, distorted and misshapen bricks, spar, oyster shells, *et id genus omne*. The only legitimate materials to use in rockwork are stones, whether large or small: the larger and more diversified they are in form, so long as there are plenty of smaller pieces used and a sufficiency of soil, the better. Rockwork does not want to be an attempt to deceive, but a picturesque place to grow Ferns and Alpines.—O. P. PEACH.

RHODODENDRON ARGENTEUM VAR.

WE do not know to which of the Indian Rhododendrons introduced and flowered in these countries the title of king has been accorded, but we certainly venture to regard the noble *R. argenteum* as their queen. It unquestionably must be regarded as at least being among the cream of Dr. Hooker's Rhododendron discoveries in the Sikkim Himalaya. Quite a tree, attaining in its native country a height of 80 feet or more, with its large, and in part, silvery foliage, it must present a noble aspect, especially so in the spring, when the new leaf buds are forming, the latter having the appearance of rosy-coloured cones. But what must be its aspect when its branches are crowned with its glorious flower heads?

We are induced to allude to it thus prominently on the present occasion by reason of seeing recently in flower at Glasnevin what we cannot help regarding as a very fine variety of this magnificent species. Among the other choice plants just then in flower in the cool conservatory there were two large specimens of *R. argenteum*, both being pretty much about the same age and size. In respect of the flower and flower heads the disparity was very striking, as on one plant they were far larger and finer than the other. The smaller we should be inclined to regard as the normal form, for it seems to agree better with the figure in Dr. Hooker's magnificent book embodying his discoveries. The gorgeous flower heads are very large, as are also the individual flowers. The head is formed of several tiers of flowers, each resting horizontally on the one below. The flowers are pink in the bud, but as they expand become white. Each flower shows at the bottom of the great open tube a rich dark purple spot encircling the base of the stamens; this is very conspicuous by reason of the way the flowers present themselves to a front view. The cluster of anthers with their purple stamens add much also to the effect, but of all the floral organs the stigma is the most striking, on account of its great size and bright rosy carmine colour. This, we may remark, is not shown in Dr. Hooker's or any other figure of it we have seen, as in no case is the large stigma shown as it is in nature—brilliantly and strikingly coloured. Mere word-painting altogether fails fitly to describe the soft voluptuous beauty of these glorious flower heads, more especially as displayed in the larger and very fine variety which has been for the last week or two the glory of the house in which it stands. Both forms, we gathered from Dr. Moore, were raised from seed. There were, moreover, several other choice Indian Rhododendrons in flower in the same house, and among them one which, as regards symmetrical compact heads and fiery brilliancy of colour, has no equal—namely, *R. barbatum*.—(*Irish Farmers' Gazette*.)

NEW BOOK.

Picturesque Europe—The British Isles. Cassell, Petter, and Galpin, London. Part I

WE make this an exception to our rule not to criticise a serial publication until completed, because we wish to aid in promoting the sale of a work which we strongly commend to

our readers as one of the most beautiful we know, whether we refer to the type, the paper, or the views. The information imparted by the Editor is interesting and popularly written. The work judiciously commences with Windsor, and its first pages relate to the Castle.

The garden attached to the Castle is not worthy of such a palace; the chief attractions of its grounds are the terraces and the trees of the parks. The elevated position of the Castle enables most extensive views to be commanded over these from its windows. One of the most attractive of those views, looking towards Eton, being from the library window, a favourite one of the late Prince Consort, is shown in the woodcut accompanying these notes. For this illustration we are indebted to "Picturesque Europe."

Heartily do we wish that it was permissible to trace the history of Windsor Castle from Roman times to the present. We could fill a page with notes on the coins of Constantine and Probus found in its vicinity; and then of the origin of Windsor forest, made by William the Conqueror, and protected by a characteristic law that "hares should go free, and whoever killed a hart or hind should be blinded," an effectual mode of preventing the poacher repeating the offence.

A vineyard was appended to the Castle, and the vintager's pay first commences in the Pipe Rolls for 1155. Lambarde records

"that tythe hathe bene payed of wyne pressed out of Grapes that grewe in the Little Parke theare, to the Abbot of Waltham, and that accompts have bene made of the charges of planting the Vines that grewe in the saide parke." Richard III. in the first year of his reign appointed John Piers to be "Master of our Vynearde of Vynes of our Castell of Wyndesore, and otherwise called the office of Keeper of our Gardyne called the Vynearde." He and his deputy were to have as

"wages and fees sixpence by the day." The garden, however, down to the close of Henry VIII.'s reign did not receive the care, nor did it cover a space equal to others of the Royal gardens. The wages of the gardener at Windsor were only £4 a-year, but those of the gardener at Beaulieu were more than £12. The gardens at Greenwich, Richmond, and Hampton Court are shown by the privy purse accounts to have chiefly furnished the King's table with fruits and vegetables.

In the year 1272, Henry III. being King, there was issued an order for timber "to pale and enclose the garden;" a fountain of freestone and a well were also constructed in it. But Edward III. let on a long lease "the garden plott" to the Corporation of Windsor, and the lease was renewed by subsequent monarchs until about the year 1700. It was rather more than three acres, and is described as "a gardine and orchard bricke walled round." King James I. of Scotland, who was confined for some years as prisoner in Windsor Castle early in the fifteenth century, gives us in a poetical effusion a description of its garden, which similarly intimates to us that it was of contracted space and formal adornments:—

Now was there made
fast by the touris
wall
A garden faire, and in
the corneris set
An herbere grene, with
wandis long and
small
Rallit about, and so
with trees set
Was all the place, and
Hawthorn hedges
knet,

That lyfe was now, walking there for by
That myght within scarce any wight espye,
So thicke the bewis and the leves grene
Beschudit all, the alleys all that there were,
And myddis every herbere might be sene
The sharpe green swete Jeneperre,
Growing so fair with branches here and there,
That as it seemt to a lyfe without,
The bewis spred the herbere all about.

Another garden in the reign of Edward III. is described as

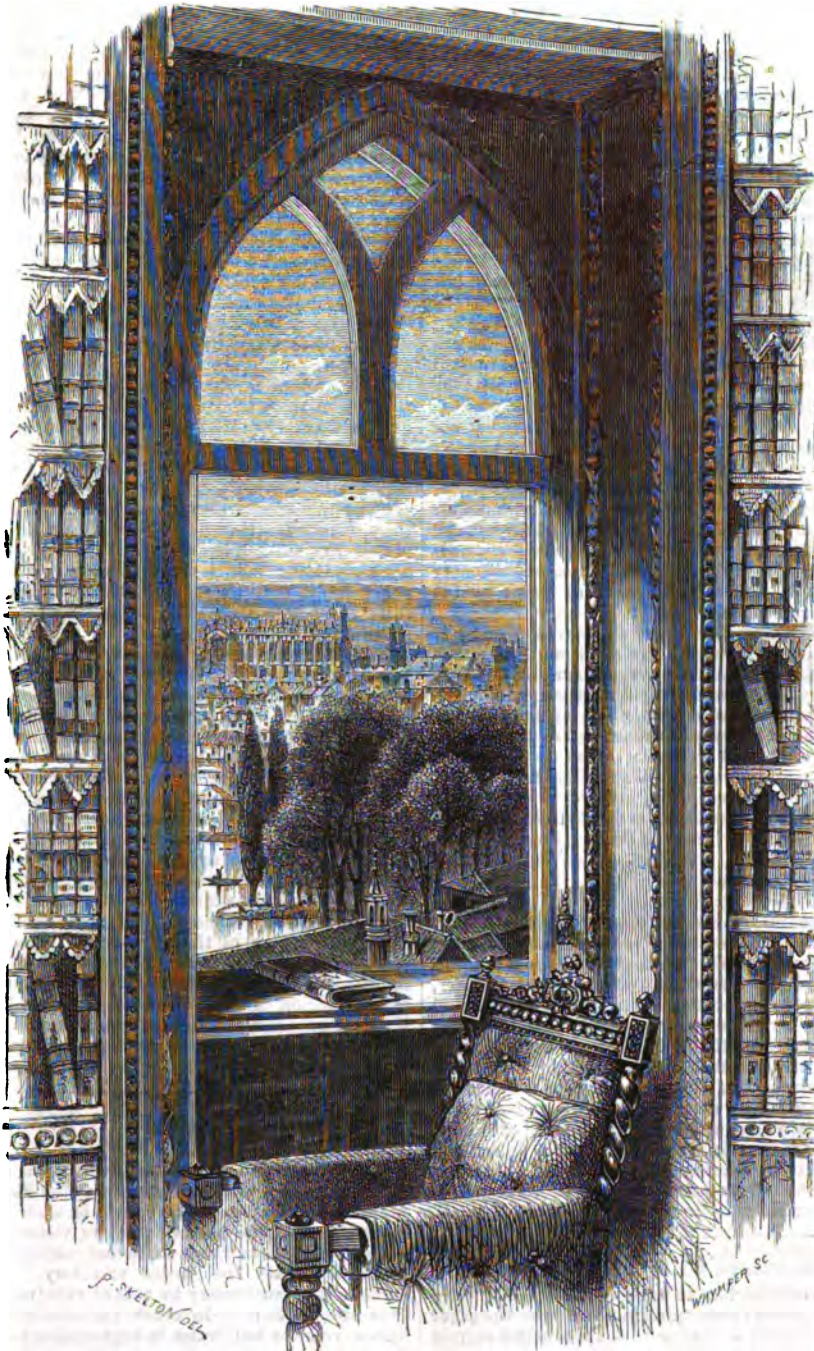


Fig. 88.—WINDSOR CASTLE—VIEW FROM THE LIBRARY WINDOW.

being "without the Castle," and its gardener's weekly pay was "twopence halfpenny."

We shall at a future season publish some notes on the present gardening at Windsor Castle.

HEATING SMALL GREENHOUSES.

Of late years some enterprising firms in obedience to the demands for small greenhouses, forcing houses, plant-protectors, &c., suitable for amateurs of limited means, have obligingly advertised these structures, giving full dimensions with the cost of the whole including the necessary staging and pathway. All these improvements have come about within the last twelve or fifteen years, and many of your readers will know how to appreciate their value. At the time I mention, the erecting of a small greenhouse was a much more troublesome affair than at present, being attended with so many disappointments. One certainly might ascertain the cost of the greenhouse itself, and possibly decide to have one if his means would permit, but when it was brought home he found out that what he innocently supposed to be part and parcel of the structure—viz., the staging and shelving, had been overlooked in the estimate by the practical builder, and the unpractical amateur had to dip his hand further into his already shrunken pocket to pay for these indispensable extras—a little particular that might possibly have deterred him from making the attempt to possess a greenhouse at all had the builder put him in possession of all the facts at the start. But happily this is no longer the case. One can now know exactly what the cost will be, delivered at the nearest railway station.

But now commence the troubles of the modern amateur. He can know from the advertising columns of "our Journal" what the cost of a house will be, of any dimensions that his means will permit him to adopt. But what he cannot discover from the same source is, how much it will cost him to heat it effectually with hot water pipes.

Now, if it pays horticultural builders to advertise—and it must do, or the advertisements would not continue to appear—full and exact particulars of the prices of the article they deal in, it surely would pay the horticultural engineer to do the same. The builder tells us he will supply a structure from 10 feet by 7 or 8 feet, to any length, width, or height we wish to have at a given cost, and delivered complete ready for work. This is definite and satisfactory. Giving the engineer credit for as much enterprise as the builder, one would naturally expect him to follow suit, and advertise that he would heat these structures of given dimensions for so much, either to adapt them for cool greenhouses or to enable their purchasers to grow winter Cucumbers in them; in fact, to use them as forcing houses, stating the price in full. They, of course, know how many feet and sizes of pipe are necessary to heat a given length of house for a given purpose, also the kind of boiler (either gas or fuel) sufficient to do the work in a fairly satisfactory manner. Let them state these particulars, and people can then choose for themselves, without going to the trouble of writing for estimates. It is not enough to say that a boiler can be had from 50s. to 60s. upwards. This is no information at all for the uninitiated. It is even of little use if it were stated how many feet of pipe it would heat. What the amateur wants to know is how much pipe and what boiler will heat a house of a certain size, and how much it will cost him. Certainly plain and reasonable questions. This is written solely in the interest of amateurs in horticulture—a very numerous class, and for whose sake I should be very glad to see my suggestions carried out as far as is practicable.—T. L. C.

YOUNG VERSUS OLD TREES.

MUCH as has been said of late in favour of old trees, more especially of old forest trees; something is also due on the other side, for I have known many a leaning to old favourites carried too far, and an after-generation had just cause to complain. Even an old-tree hobby may be ridden too hard, as when a too great liking to trees forbids their being duly and timely thinned; the issue is then the reverse of creditable, and the good appearance of the trees is irretrievably gone, especially if they be of the Pinus tribe. Deciduous trees will struggle, and in some measure come round a little, but Firs never do so: hence the propriety of timely thinning them in plantations where a well-furnished bottom is the object. Offences of omission are quite as common as those of commission in the management of ornamental timber trees, not that I am an

advocate for much pruning—the less, in fact, the better; but judicious and timely thinning of young growing trees is as much a duty as the cutting of the old trees is a fault.

I should like to see young trees planted more freely. Many proprietors of domains feel a just pride in their noble trees, but would seem to forget that they have only a limited existence. Trees which give importance to parks and grounds cannot last for ever, yet but little is done to replace them. Where the space hardly allows of a greater number of trees than already exists, I would not hesitate to advise the taking-away now and then of an old worn-out tree where it can be dispensed with without injury to the general effect, and replacing it with a young one; not, of course, in the same spot, but somewhere in the grounds where it may seem wanted. I fear there are many parks and estates in which there is a lack of trees of from ten to twenty or thirty years of age, while very old trees are plentiful enough.

I sometimes think the rule or law said to exist in Japan, that for every tree that is cut down there must be another planted, might well be acted upon here. One cannot but regret the worship of utilitarianism which is frequently exhibited by those who fell trees freely but plant them reluctantly. Be assured there will come a day in which the fine old trees which are now so much prized will no longer fulfil their offices, and the proprietors of the present day will be reproached by the generation then in occupation for not planting trees at the proper time, forgetting, or possibly not guessing that it was respect for the trees now in existence that prevented it being done. I hope, therefore, that the cry, "O spare the tree," may not be carried too far, but that even a little sacrifice of present appearance may, if necessary, be made, and a few old trees, favourites though they be, might be cut down to be replaced by young trees that will be wanted many long years hence. As we have inherited much in this respect from our ancestors, is it not reasonable that we should bequeath something in turn to those who will come after us, by occasionally planting a few trees?

In performing the proper thinning or cutting-down of old to make way for young trees some judgment is, of course, necessary, or mistakes may be made. Plantations of Scotch or Spruce Fir that have stood unthinned for a number of years must be very sparingly thinned at first, and not at all, or but very little, on the windward side, and especially if in a very exposed position. I remember some years ago seeing an example, showing the evil effects of not adhering to this, on a plantation crowning one of the heights of a chalk hill in Surrey. Someone had advised an opening to be made to obtain a view to some place of eminence in the distance, which was done the required width; but the wind rushed in and increased the width of that opening in a frightfully ugly manner, clearing whole rods of ground of the trees, much to the mortification of the proprietor. I believe it was many years before the remaining trees regained anything like a decent condition. Such accidents or mistakes are not uncommon, and I mention this to prevent others of a like kind occurring. My final advice is to thin plantations judiciously and provide for the failure of old by planting young trees, or some parks will in a few years be denuded of timber.—J. ROBSON.

CHAPTERS ON INSECTS FOR GARDENERS.

No. 6.

My last communication closed with some remarks on midges, introducing also to the gardener the familiar insects known as gnats. I may appropriately refer to their history and habits; for gnats also, like the midges, are visitants to gardens—not merely visitants in some instances, since they are often born and bred within the garden precincts. In many suburban gardens it is customary to collect rain water and store it in tubs and tanks; or in other gardens, rain water not being handy, river or well water is kept until it becomes soft. These receptacles, if uncovered, are sought out by female gnats, which have a liking for still water; and I have heard gardeners blamed for having (unconsciously) gnat-nurseries on their premises, thus multiplying our tormentors in the summer season. But then, again, people have argued that a few square yards of water in or close to a garden are of utility, serving to drown a good number of insects both by day and by night.

The singular life history of the larva of the common gnat has been already referred to in this journal, and it may serve as a sample of the economy of the Culicidæ. The feathery palpi and antennæ, and the proboscis extended in front, enable

ordinary observers to recognise gnats with little difficulty; though a majority are not awake to the fact that the non-plumed female, less often seen, is the only gnat that is felt and also heard, for the shrill cry preceding onslaught is only produced by the female insect. According to Prof. Westwood the proboscis or beak of the gnat, small as it is, represents all the complicated parts discernible in the largest insect, and his admirable description runs thus—"There is a broad and hollow lancet-like piece, representing the upper lip; a pair of slender needle-like pieces, serving as mandibles, serrated on the outside at the tip; a second pair of similar but much more slender organs dilated at the base, representing the maxillæ; a very slender needle-like instrument, representing the tongue; and then there is an outer tubular canal in which these parts lodge when at rest, representing the lower lip."

Persons engaged in gardens are much exposed to the punctures of these pertinacious blood-suckers, and it may be worth recording that as good an application as any to relieve the irritation is arnica lotion not too weak. Undoubtedly by some means or other the insect, when drawing blood, injects poison into the wound, to render the blood more fluid it is thought: hence some Americans strenuously advise people to allow gnats to finish their repast, urging that when they do so they remove the poison with the last draught. One more comment on these *Culicoides* ere we dismiss them. Did it ever occur to any reader how strong a gnat must be? You may have seen on some flower bed a tortoiseshell butterfly or a sphinx moth poised on expanded wings and remaining apparently motionless in the air, and you have wondered how it's done. Gnats can do the same thing and keep it up for hours—rising and falling, it is true, yet not yielding an inch of air, as Mr. Staveley says; hovering steadily, exactly in the same perpendicular. This is accomplished by means of a series of band-like muscles which cross and recross the thorax, which may be seen by the microscope. The centre of gravity also falls in this part of the body through its proportionate stoutness, which is an additional aid to this sustained hovering.

Two small families, not very noticeable, serve as a connecting link between the gnats and the crane flies. First the *Phlebotomidæ*, which, though so named, contains species that are harmless enough, such as the tiny dirty grey insect which shows itself in houses and conservatories on mild winter days, crawling or hopping on glass or woodwork. Entomologists call it *Psychoda phlebotomoides*, and its odd springs or hops are performed by the help of the sloping wings, which are very downy. The larva or maggot lives in manure. Amongst the *Heteroceritæ* are aquatic as well as terrestrial larvæ. The hind margin of the wings will be found to be fringed with hairs on these flies, not with the delicate scales occurring amongst the gnats.

Lastly, as belonging to the *Nemocera* section of the *Diptera*, I have to name the *Tipulidæ*, lanky-legged creatures, which one associates more with the later summer or autumn than with any other season of the year. These flies are at once distinguished from all the families already noticed by a transverse seam which crosses the middle segment of the thorax. To some people the readiness, or seeming indifference, with which a daddy-longlegs parts with one or more of these useful limbs is matter of surprise. Olmsey as we may think these insects in various situations where they occasionally attract our notice, they are not awkward when skimming among the grass or low herbage, for which pursuit they are admirably formed. A few species have aquatic larvæ, but the bulk of them feed underground, on roots chiefly, haunting lawns and fields, occasionally also the kitchen garden. *Tipula oleracea* is a well-known pest, rejoicing in the vague name of "wire-worm;" but this and other species are well held in check by numerous bird enemies.—J. R. S. C.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

THE weather has lately been very unsuitable for out-of-doors operations; but as soon as the ground is in a friable condition all spare ground will be cropped, except what is intended for successional crops of Peas, Beans, &c. When the ground is sufficiently dry it ought to be lightly forked over. Hitherto all the Peas have been sown on borders well exposed to the sun, but we shall now sow Dr. Hogg, Fillbasket, and G.F. Wilson in the open garden quarters. This last-named sort may be only an early selection of that famous Pea Veitch's Perfection; if it is, it is earlier and quite as prolific. We are much indebted to those who carefully select from a good stock, but it is doubtful

if they ought to give a new name to the variety they have improved, as it tends to confusion. With this sowing Spinach will be sown between the rows.

Mice and sparrows are well known to be troublesome. Red-leading the seeds, placing sand in the drills, or cutting furze into short lengths and strewing it over the Peas in the drills before filling-in the soil, has been recommended to prevent the attacks of mice. This may be worth trying, but we set traps as soon as there is any trace of mice. They go to the traps, and the Peas are saved while the enemy is destroyed. Where there are such clouds of sparrows as we have, it is little use running strings over the rows or placing any object to scare the birds; Pea-guards made of galvanised wire netting bent over the rows are most effectual. When the young plants reach the netting it is removed to the next sowing, and the rows from which the netting has been removed are earthed-up and sticks placed to them; after this they are seldom touched by the sparrows. If we could have glass covers similar to the protectors it would be a great advantage for the first crop.

It is no use sowing Dwarf Kidney Beans out of doors until all danger of their being destroyed by frost is over; but if a sowing could now be made in a pit or frame the produce would come in useful about the end of May, and the plants would yield gatherings until they could be obtained from the first sowing out of doors. We have not yet planted out our early Potatoes; they are much better in the boxes in the cool orchard house; they are placed one layer thick, with some cocoa-nut fibre refuse over them enough to cover the tubers.

Paranips have been sown in ground that had been well trenched. We sow the Hollow-crowned; a good stock of this is the best for all purposes. The Paranip is one of the most easily cultivated vegetables we have; it thrives in any soil, but the ground should be well trenched and manured. For the preceding crop the rows are 18 inches apart, and the plants are thinned to 8 inches apart in the rows. The roots keep best in the ground during winter, but a portion should be lifted and stored where they can be reached easily, if the weather is such that the roots cannot be lifted out of doors.

Carrots and Onions will also be sown if the weather continue favourable. The Onion delights in rich manure being dug into the ground, but not so the Carrot; and it is better to crop on ground that has been well manured for a previous crop, or place the manure about a foot below the surface. We had some ground deeply trenched and manured in this way; the soil that was dug up from the bottom being placed on the surface, taking care to have all the surface soil at the bottom. On this ground a crop of sound Carrots was obtained quite free from the maggot, whereas in previous seasons the crop was worthless. We found the maggot again attacked the crop when the ground was trenched next season. The spring-sown Onion crop also suffers severely from the maggot, which causes us to sow in autumn and transplant in spring.

A good plan to insure early Onions is to plant small bulbs at once. The ground should be forked over, and the small Onions planted in rows just deep enough to cover the top of the Onion. When the seedstalks appear break them off. This will cause fresh bulbs to form, which will be in use much earlier than autumn-sown seeds.

The best Carrots are Early Short Horn and James's Intermediate. The Altringham is good for a general crop. Of Onions White Spanish and Brown Globe are amongst the best. Leeks must be sown at once to be planted out when they are sufficiently advanced. Shallots and Potato Onions are best planted in the autumn, but if that has not been done the operation should not be delayed longer. Autumn planting prevents the attack of maggots. The Welsh Onion, which does not form bulbs, should also be sown in the autumn. This is a hardy species from Siberia of strong flavour. Garlic is not much used for culinary purposes; it ought now to be planted in light dry soils; the bulbs, of course, are divided into single sets, or, as they are termed, "cloves;" these are just covered over the top. And lastly we would mention Chives. These are easily cultivated, and are useful in the spring for salads and soups. The plant is perennial, and will continue to throw up leaves for two or three years, when the clumps must be taken up and be subdivided, replanting again on fresh ground. It makes a good edging plant for a border; the leaves only are used by being cut over close to the ground.

PINES.

Some of the plants intended to fruit in the house that was started about the 1st of January seem to make too rapid growth to show fruit. We have had such plants that would grow until midsummer before any fruit showed. The plan of cutting the plants over close to the surface of the ground is well known now to Pine-growers. The plants should be operated upon as soon as it is perceived that they will not show for fruit; 9 or 10-inch pots are sufficiently large in which to pot. Some five or six of the largest leaves should be removed from the base, the compost should be rammed-in rather firmly, and water must not be applied for at least a week. The suckers that were potted into

7-inch pots early in the autumn ought now to be repotted, but this operation must be delayed until we can find room for them. When the Pines are repotted is a good chance to turn the tan in the bed; and if this is spent, and fresh tan cannot be obtained, the old material may be sifted, reserving the rougher portion that remains in the sieve to mix with the fresh tan. This turning and mixing the tan in the bed will raise the temperature very much, which is just what is required to promote root-action. When the roots are matted round the insides of the pots is the time that danger is to be feared from overmuch bottom heat. 70° at night with a rise of 15° by day from sun heat is a good temperature for them at present.

PLANT STOVE AND ORCHID HOUSES.

The weather is very mild at present, and with but little artificial heat the night temperature is sometimes up to 70°. It is also necessary to use the shade on bright sunny days. As nearly all the plants are starting into active growth an increase of moisture is necessary in the atmosphere as well as a higher temperature. We have been repotting *Nepenthes* and *Sarracenia*. The last-named, being an American genus, may be considered quite as much a greenhouse as a stove plant; but the plants do better in a cool Orchid house than they do in the greenhouse. A rather close moist atmosphere is that best adapted to them. The pots are filled to one-third of their depth with clean drainage; over this some sphagnum moss is placed to keep the drainage clean, and the compost, which is composed of very fibrous peat and sphagnum in equal parts; a few bits of charcoal and some potsherds are added to it. All the genus *Nepenthes* require similar treatment to the *Sarracenia*. It is very undesirable to injure the roots. The outer surface of the ball when it is turned out of the pot may be full of roots. If it is thought desirable to reduce the ball it must be done by carefully picking out the old compost with a pointed stick. The copious supplies of water that this class of plants requires causes the compost to become sour, and if this should be the case it is certain that the old material must be removed. The potting material must be pressed in only moderately firmly with the fingers. The plants must also be shaded from sunshine; in fact a house with a north aspect is the best in which to grow *Sarracenia*. Mr. Baines used to grow his magnificent specimens in a cool fernery. A few of the best *Sarracenia* are *S. flava* major, *S. Drummondii*, *S. purpurea*, and *S. variolalis*; these are distinct in character. Of *Nepenthes* may be named *N. Rafflesiana*, *N. phyllaphora*, *N. Hookeriana*, *N. lavis*; and last may be named the rare, and beautiful as rare, *N. sanguinea*.

We have also put in cuttings of some softwooded plants to flower in the autumn and winter. Of these are the *Bouvardias*. The most useful for cutting from is *B. Vreelandii*, *B. Hogarthii*, and *B. longiflora*. *Eranthemum pulchellum*, the blue flowers of which are charmingly distinct, harmonise well with *Bouvardias*. *Thysanocanthus rutilans* makes famous flowering specimens from cuttings struck now, and the lovely *Monochætem ensiferum* does well with similar treatment. *Ixoras*, *Gardenias*, *Hoyas*, *Torenia asiatica*, *Plumbago rosea*, *Pentas carnea*, and *Medinilla magnifica* will strike well now in bottom heat, and will supply the place of larger plants that it may be necessary to dispose of from their growing too large for the house. *Ixoras* and *Gardenias* strike best with a bell-glass over the cuttings. This should be wiped inside daily with a dry cloth.

FLOWER GARDEN.

We continue to put in cuttings of *Verbenas*, *Coleus Verschaffeltii*, *Ageratums*, &c. All these rapid-growing bedding plants are much better to be propagated from cuttings in the spring, even if there should be a sufficient stock of autumn-propagated plants. If the later-rooted plants may be much smaller at planting-out time than those that have been kept over the winter they will grow away more freely, and by midsummer will make the best flower beds. Bedding *Calceolarias* are now in boxes in cold frames, but if the frames are wanted for more tender subjects the present occupants will be planted out in trenches similar to those for *Celery* plants. Our *Lobelia speciosa* was sown early in autumn, and has been pricked out into boxes some time ago. Spring-sown plants do not come into flower sufficiently early.

Dahlia roots must be put into heat at once. The tubers may be planted thickly in a box in light soil, and the label may be fastened to the old stem to insure correctness. The buds will soon start into growth either in a hotbed or forcing house, the latter to be preferred. Hollyhocks may either be propagated by cuttings or by root-grafting. They may be planted singly in small pots, and the pots plunged in a gentle bottom heat. They do best in a heated propagating house, as they sometimes damp-off in a cold frame.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

LIVERPOOL (Spring Show). March 5th. Mr. R. Wilson Ker, 6, Barnett Street, Church Street, Hon. Sec.

LEEDS (Spring Show). March 15th and 16th. Mr. G. Forbes, 103, Hyde Park Road, Sec.
BRISTOL (Spring Show). March 12nd and 23rd. Mr. G. Webber, Holm Wood, Westbury-upon-Trym, Hon. Sec.
GLASGOW. March 29th, May 10th, and September 19th and 18th. Mr. F. Gibb, Doughall, 16, Canning Street, Sec.
ROYAL CALLEDONIAN HORTICULTURAL SOCIETY. Shows April 5th, July 5th, and September 18th.
WESTMINSTER AQUARIUM. April 19th and 18th, May 10th and 11th, May 30th and 31st, July 5th and 6th.
TIVERTON. May 24th and 25th. Messrs. A. Payne and J. Mills, Hon. Secs.
MANCHESTER (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.
SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fulde, 80, York Street, Sec.
MADSTONE (Roses). June 21st. Mr. Hubert Bansted, Rockstow, Madstone, Sec.
SPALDING. June 21st. Mr. G. Kingston, Sec.
REIGATE (Roses). June 24th. Mr. J. Payne, Treasurer.
RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.
SOUTHPORT. July 6th, 7th, and 8th. Mr. E. Martin, Sec.
HELSINGBORG (Roses). July 19th and 18th. Mr. J. Mitche, Sec.
WIMBLEDON. July 13th and 18th. Mr. P. Appleby, 5, Linden Cottages Hon. Sec.
BRIGBOURNE. July 29th. Messrs. C. Jessop & E. Rawnsley, Hon. Secs.
HEWORTH (Horticultural). August 2nd. Mr. E. H. Fettes, Hon. Sec.
CLAY CROSS. August 15th. Mr. J. Stallard, Clay Cross, near Chesterfield, Sec.
PRESTON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.
SHERWUD. August 16th and 17th. Admire & Naunton, Hon. Secs.
SMATON BURN. August 26th. Mr. E. Richardson and Mr. W. Elliott, Secs.
DUNDEE (International). September 7th, 8th, and 9th. Mr. W. R. McKelvie, 36, Enfield Crescent, Sec.

TRADE CATALOGUES RECEIVED.

Harrison & Sons, Leicester.—Catalogue of Choice Seeds for the Garden and Farm.

Charles Sharpe & Co, Sleaford.—Descriptive Catalogue of Farm Seeds.

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BACK VOLUMES AND NUMBERS (B. K. L.).—We have vols. I. and II. bound together, two numbers (18 and 15) missing; vols. III., VII., and VIII., half bound in calf, second-hand. The numbers you specify are out of print.

WILD FLOWERS (H. W.).—It is not likely that a new edition of "Rambles in Search of Wild Flowers" will soon appear.

FUCHSIAS AND CALADIUMS FOR EXHIBITION (A. D. W.).—*Fuchsias*: *Light*, *Arabella* improved, *Starlight*, *Lustre*, *Marginata*, *Complena*, and *Guiding Star*. *Darke*, *Epoch* Arden, *Rhododendron* Dhu, *Alabaster*, *War Eagle*, *Semeter*, and *Father Ignatius*. *Caladiums*: *Chantilly*, *Bellevue*, *Bicolor splendens*, *Baranquillo*, E. G. Henderson, and *Troubetzkoi*.

AGE WHEN SEEDS CEASE TO GERMINATE (J. L. Luckley).—There is a long list in Johnson's "Science and Practice of Gardening." We extract the following from it:—"One year: Peas, Beans, Kidney Beans, Carrot, Parsnip, Onions, Herb-patience, Rhubarb, Kim, Poplar, and Willow. Two years: Radish, Salsify, Scorzoneria, Parsnips, the Alliums, Cardoon, Rampton, Alexander, Love Apple, Capsicum, Egg-plant. Three years: Seakale, Artichoke, Lettuce, Marigold, Beas, Rosemary. Four years: Brassicas, Skirret, Spinach, Asparagus, Endive, Mustard, Tarragon, Borage. Five and six years: Burnet, Sorrel, Parsley, Dill, Fennel, Chervil, Hyssop. Ten years: Beet, Celery, Pomplon, Cucumber, Melon."

POTATOES BITTER (Idem).—Old Potatoes, when they sprout form an alkaloid called solanine, which is bitter and is a virulent poison, the same as is found in the Nightshade, *Solanum dalecarlica*.

SELECT HARD RHODODENDRONS (Subscriber).—*Ormonde*: John Waterer, Barclayham, Blandyham, Caracass, Mrs. Milner, Sir Thomas Sebright. *Purple*: Mrs. G. H. W. Hancey, Old Port, New Brunswick, Macfarlane nigrum, Otello. *White*: Mrs. John Clouston, Duncraig, Braemar, Minnie, Purity, Pictum, Mont Blanc. *Pink*: *Concours*, *Stella*, *Roseum grandiflorum*, *Lady Frances Ormsley*, *John Spencer*, *Byssantium*. *Scarlet*: *Alarm*, *Mrs. W. Boydell*, *Thian*, *James Bateman*, *Lady Clemence*, and *Francis Dickson*.

VEGETABLES FOR EXHIBITION (St. Edmund).—Of Peas *Superb* has the longest pod, and *Supplanter* is better than *Philbeet*. Dr. Hogg is a fine Pea. They should be sown during the second week in April to be in use by the first week in August, but the season has an influence on the time of Peas coming into use. Cauliflower sown in March on a warm border would be in at the time you name. King of the Cauliflowers is a good sort, and *Walchereen*. Autumn Giant would not be in until later. Sow the Lettuces the first week in May. Snowflake is the finest-looking and best of the Potatoes you name; but for beauty, *Perfection Kidney* (Fenn), and a round sort, *Early Market* (Fenn), are worth notice. What you may grow for a basket of vegetables may be, Broad Beans—*Saville Long*-pod. French Beans—*Canadian Wonder*. Runner—*Scarlet Champion*. Beet—*Dwarf*, *Dwarf Red*. Celery—*Lancaster Red*, *Matchless White* (Williams). Carrot—*James's Intermediate*. Cucumber—*Tender* and *True*. Turnip—*Snowball*. Vegetable Marrow—*Short-jointed Long White*; and we presume you will have Cabbage and autumn-sown Onion, not forgetting a good dish of Tomatoes.

CUTTING-BACK CROTON VARIEGATUM (W. R.).—It will, if cut hard-in, break freely if encouraged to do so by a moist atmosphere and brisk heat, sprinkling overhead frequently, but watering sparingly at the root. The plant for a few weeks (three or four) should be kept rather dry, and when it has broken and made shoots 8 inches long repot, reducing the ball, and water very carefully until the roots are working freely in the fresh soil, and shading for a time until established.

FORGING HOUSES ON WATERY GROUND (Subscriber).—You may, by concreting the bottom of the borders and laying the foundation of the walls in concrete, erect forcing houses, "supposing that the water were to rise through a bed of gravel 14 feet thick to within 8 feet of the surface of the ground," but you must prevent its inundating the fruit borders. We should have the borders entirely above the ground level, which will take you further from the danger of an inundation; and to make sure of the roots not getting into the watery bottom we should lay bricks on the flat on the concrete, and run with Portland cement in a thin mortar state, filling the crevices and covering the surface of the bricks.

CULTURE OF LILIUM AURATUM (E. Wheeler).—The bulbs you have bought-in should be potted in light soil with some sand round the roots. You should plunge the pots in some light material in a cold frame until the growth is an inch or two long, when the plunging material may be removed. If the plants come in contact with the glass they should be removed to a light airy house.

POLLEN (A. R.).—There is no substitute. On the receipt of seven postage stamps with your address the book you mention will be sent post free.

CULTURE OF LIPAROGIA ROSEA (Mrs. C. W.).—This and the white kind would succeed admirably in the cool conservatory, planting out in a well-drained border composed of fibrous peat, watering very abundantly during growth, and at all times keeping the soil wet, though less water will be required when the plant is not growing than when at rest. Do not cut the plants down, but allow all the shoots to remain until they die, then remove them.

TURKISH CULTURE (Idem).—Pot the bulbs singly in 5-inch pots in turfy loam with a fourth part of well-decayed manure, and so as to cover the roots to the apex, plunging the pots in a hotbed of about 70° to 75°, removing all offsets before potting, and not watering until growth is somewhat advanced, the roots being in possession of the soil; then water moderately at first, increasing the supply as the plants advance in growth, shifting into 7-inch pots when the 5-inch are filled with roots, removing to a stove or other house where there is a good temperature, keeping well syringed, and apply liquid manure two or three times a week after the plants have the flower stems rising. When blooming they may be removed to a greenhouse.

PROPAGATING VERONIKAS (E. M. P.).—They are best propagated by cuttings of the young shoots having two joints and the growing points, cutting transversely below the lowest joint, removing the leaves from it, and inserting in light sandy soil up to the second joint about an inch apart, and placing in a hotbed, keeping moist and shaded from bright sun. Plants from seed may be had by sowing in a hotbed and growing-on in heat, hardening-off before planting-out, but they have neither so good flowers nor flower so freely or early as plants from cuttings.

HELLEBORUS RIGENS AFTER FLOWERING IN POTS (Idem).—Harden-off, and plant out on an east border or in partial shade in good rich light soil, and water freely in dry weather.

CUCUMBERS—ROUGH GLASS (J. P.).—In glazing the rough side is usually placed outwards. We have grown excellent Cucumbers in frames similar to those you mention, not raising the plants too early in the season. For summer culture the rough glass affords useful shade, but in the early spring is scarcely admits sufficient light to the young plants; hence we do not advise you to sow the seeds until March, or, which is preferable, to raise the seedlings under clear glass.

CULTURE OF GREEN OLIVEBERRY MELON (H. B. R.).—We have no experience of the kind you send us an engraving of, and can add nothing to that given in the enclosed descriptive notes which accompany the woodcut, which we make out to be that of the ornamental Gourds. Seed to be sown in April in a hotbed, the plants to be potted-off and grown-on in gentle heat, hardening off before planting-out in May or early June on a ridge as for Vegetable Marrows, protecting with a handglass until the plants are established, with the difference only of the shoots being trained to a trellis instead of allowed to run along the ground. A warm situation should be chosen, and sheltered from wind, watering abundantly in dry weather.

OLIVEBERRY FOR NORTH-WEST WALL (F. A. R.).—The fastest-growing climber we know and suitable for the aspect is *Clematis vitalba* (Traveller's Joy). As you do not desire Virginian Creeper, there are no other plants so suitable as Ivy, which in the green and variegated kinds succeed admirably.

CUCUMBER FOR FRAME CULTURE (St. Vincent).—Tender and True is the finest of all Cucumbers, and does remarkably well in a frame over a dung hotbed, attaining to a large size, and is very prolific. If you require a small fruit, then Duke of Edinburgh (Munro's) would suit you, being very prolific, handsome, and good, but only half the length of Tender and True. The other kind named by you is also good.

LITTLE HEATH MELON (Idem).—It succeeds in a frame with a little heat at starting, and by giving air moderately and closing early the fruit ripens perfectly without further artificial heat. We do not consider the Ashpemozeller Melon need be grown if you have Little Heath, though in a warm season and situation it, as a ridge kind, affords fine fairly-flavoured fruit.

TAKING OFF SHOOTS—HEADING STOCKS (T. V.).—Take the shoots now or before they begin swelling the buds, and lay them in damp soil in a shady position; and the stocks if large should be cut back at once to within a short distance of where they are to be grafted.

PRUNING CLEMATIS JACKMANII (A. J.).—Cut-back to firm ripe wood, and so as to originate shoots from the base for covering the wall. If you have a large extent of space to cover it may be effected by bringing the shoots down and training them horizontally, or where they may be required.

PROPAGATING EUCOMYDUS (Idem).—Take cuttings of the half-ripened shoots in July or early August, and insert in sandy soil either in pots or in a border surfeited with an inch of silver sand, and cover with a frame or handglass. Keep moist and shaded from bright sun; or the half-ripened shoots strike freely in gentle heat in moist soil and shaded.

CAMELLIA FLOWERS DROPPING (T. J. H.).—The flowers drop so soon as expanded from overcovering—a deficiency of root-action, which may be prevented by judicious thinning when the buds are set. Never before have we seen Camellias so floriferous or so fine as they are this season. Top-dress, if

you do not repot, with a compost of equal parts of very fibrous light loam and dried cow dung. The roots come up into that and are much invigorated, as is manifested by the vigour of the plants and healthy foliage. Remove the surface not occupied with roots, and apply the fresh soil about an inch thick if it can be done without reducing too much the water-holding space. We cannot name florists' varieties, they are too much alike.

ROSES—SELECTION AND SOIL (J. L. Thornton).—1st. As to the list of Roses, we should strongly advise you to reject the following:—Aimée Vibert, Anna de Diesbach, Auguste Mlle, Baron Chausand, Empereur de Maroc, Miss Ingram; and though Baron Gonella, Lord Clyde, M. Josephine Guyot, Madame Rivers, and Queen Victoria are good, yet there are better. We should advise you to procure Alfred Colomb, Charles Lefebvre, Marie Baumann, La France, M. la Baronne de Rothschild, Dr. Andry, Marguerite de St. Amand, Abel Grand, Marquise de Castellane, Comtesse d'Oxford, John Hopper, Emille Hausberg, Louis Van Houtte and Annie Wood. We see we have named fourteen sorts here, and only discarded nine, and if you only want twenty-four you will have to omit some others from your list if you adopt those we recommend; and, if so, have only one *Maréchal Niel*, and omit *Beauty of Waltham*, *Janne Desprez*, *Madame Faloot*, and *Narcisot*, which, though a glorious yellow when it succeeds, is at the best but uncertain. In your situation all the Roses will be perfectly hardy. Dig your beds out deep; beware of shallow beds on the top of a mountain limestone, and obtain some alluvial soil, if you possibly can, from any of the low-lying ground between Ulverston and the Severn, to mix with the turfy soil; but if you use one-third manure you need not use one-third leaf soil as well. You do not want too much carbonaceous soil to start with. The soil on the sides of the roads between Pining and Tockington will make a first-rate addition to your Rose compost if you can procure any. (The writer knows the district well). For your soil and situation have the Roses on Manetti stocks, and not on Briars.

SALT FOR MANGOLD WURTZEL (Buckinghamshire).—Twenty bushels per acre, sown over the surface before the last ploughing.

WEEDS ON PATHS (Clapham).—A saturated solution of common salt applied at a boiling temperature is the most effective destroyer of the weeds. If you apply salt thickly over the walks, that will also kill them, but you must not let it touch the Box or other edging.

WREDDY LAWN (M. D.).—We have no experience of the effects of the substance you name.

CULTURE OF EUPHYRERIA RUBERRIMA (E. G. T.).—These hoots of last year will have been cut-back to the eyes at their base. Early in March the buds will begin to swell, when the plants should be turned out of the pots, and removing all or most of the old soil return them to the same size of pot, employing a compost of sandy fibrous loam and sandy peat in equal parts, and a third of leaf soil, old cow dung, and silver sand, affording good drainage. Place them in a house where there is moderate heat, as that of a vinery or pit, and they will soon start freely, and should have a position near the glass, free ventilation, and be freely syringed. After May they do best in a cold pit, kept rather close, and early closed, so as to have good heat. If you could give the plants after potting the benefit of a hotbed for about three weeks, so as to have the roots active before the tops are excited, all the better. Shift the plants into larger pots as required, watering with weak liquid manure after the flowers show.

SOWING AUCUBA BERRIES (J. H.).—When the berries are ripe sow them in pots or pans in loam with a little peat, covering them about three-quarters of an inch deep, and keep moist, placing in a light airy position in a greenhouse or pit. The outer skin may be removed before sowing, but this is not important. They must not be divided, as from one berry you will only have one seed and plant. The plants will appear in the early part of next spring, the seeds commencing to vegetate in autumn. We do not think you will succeed in obtaining male plants flowering simultaneously with the females, the former in all the varieties preceding the latter.

HOLLYHOCKS (A.).—Black Douglas, black; Andrew Goodfellow, dark crimson; Mrs. Downie Improved, orange; Countess of Craven, rose; and Empress Eugenie, French white.

FORMING VINE BORDER (Amateur).—We should excavate at least another foot, and upon the red sand concrete place 9 inches to a foot of drainage, which will leave you 8 feet in depth for the border, if having proper drains and outlets. The sandstone rock will be available for drainage. We should have liked your border better had you arranged to have part outside, by openings in the front wall admitting the roots to a properly-prepared outside border. It will answer to make the border piece by piece as the Vines advance. The kinds you have selected—viz., Muscat of Alexandria, Alicante, Gros Colman, and Lady Downie's are excellent for cutting in December, January, and February.

REMAKING VINE BORDER (Subscriber).—It would be better to have the border partly inside and part outside, so much of the former as to admit of the Vines being planted inside; but you will certainly have a difficulty with the fine, which must be in the front or near to it—not more than 8 feet from the front wall. The difficulty might easily be overcome by heating with hot-water pipes. Black Hamburgh and Muscat of Alexandria are respectively the best black and white Grapes for general purposes. Other good kinds are Buckland Sweetwater, Golden Hamburgh, and Waltham Cross, all white. Black—Black Prince, Madresfield Court, and Venn's Black Muscat. If you want late-hanging kinds, the best are Alicante, Lady Downie's, Gros Guillaume (Barbarossa), and Gros Colman, all black; and Calabrian Raisin, Trebbiano, and Syzian, white.

PEACHES AND NECTARINES FOR HOUSE (Idem).—You wish a few only. The very best are, of Peaches—Crawford's Early, *Dr. Hogg, Grosse Mignonne, *Noblesse, Bellegarde, Barrington, and *Stirling Castle. Nectarines—*Lord Napier, Albert Victor, *Elruge, and Violet Hative. Those marked with an asterisk will suit if you only desire a few trees.

PRUNING PEACH TREES (A Constant Reader).—The bearing shoots should be cut back to 8 or 9 inches, depending, in a measure, on there being at that length of wood a wood bud to which the shoot must be shortened, in no case cutting back to a bloom bud, it being important that every shoot have at its extremity a wood bud. Usually it is safe to cut to a triple bud, having two side plump round buds, and a smaller-pointed one in the centre of those, which is a wood bud. If no wood buds are present except at the base and the extremity of the shoots, such shoots must be left their full length, it being important that the fruit have leaves upon the same shoot beyond it. The short spur-like shoots should not be shortened.

SHRUBS FOR A FIELD (A Subscriber).—At the back of the flowering shrubs we presume you have other evergreens, and taller than the flowering shrubs will be when fully grown, but as you mention shelter we greatly doubt if such

is the case, and to meet this we may hint that we should fill the undotted part as shown in your sketch with *Portulaca Laurei*, common Xero, and Holly, interspersed with a few Mountain Ash, Laburnum, double white, pink, and scarlet Thorns, double Cherries, and ornamental Pears, and Orbs. Suitable evergreen shrubs are *Arbutus unedo*, *Anoniba japonica*, *Berberis Darwini*, *B. (Mabonia) aquifolia*, *Ostrya coccinea*, *Quercus*, *Laguncularia*, *Crataegus*, *Ulex europaea* *flor.-pleno*, also *Rhododendron ponticum* var., *S. entawillense*. Deciduous shrubs are *Amelanchier vulgaris*, *Amelanchier*, *Crataegus*, *Deutzia crenata* *flor.-pleno*, *D. scabra*; *Philadelphus coronarius*, *P. coronarius* *flor.-pleno*; *Ribes sanguineum*, *R. sanguineum* album, *R. speciosum*; *Spiraea arifolia*, *Douglasii*, and *vailloni*; *Syringa persica* and variety *alba*; *S. vulgaris*, and its variety *alba*; *Viburnum opulus*, *V. dentatum*, and *Wegelia rosea*.

AMATEUR'S PIT (E. H. D.).—The furnace you propose is not too small. It should be the length in grate bar you mention, and the height we should increase by arching the furnace over with firebricks in a semicircle from three courses of bricks above the grate bars, which will give space for smoke after the fire is banked; but the dimensions you give will answer. You ought to have the evaporation troughs, one for the first division, and two in the larger one. They may be formed of cement upon the fire-covers 2 feet long, and the width of the fire minus the thickness of the cement on each side. If 2 inches deep you need not trouble further about depth. The holes in the wall will be of very little use, as you will only have the side heat from the fire. With rubble at the bottom of the bed you might, perhaps, obtain sufficient heat to enable you to grow Cucumbers and Melons satisfactorily. We cannot perceive which of the supplementary remarks are insufficiently explicit.

BLOW-COMBUSTION BOILERS (Bee in Urbe).—We do not know in what their disadvantages consist, certainly none of those you mention. They are not more liable to get out of order, they give equal results, and are not more exhaustive of fuel or labour than other descriptions of boilers, and are well adapted for an amateur; but amateurs having a falling, with other people, to expect too much, we advise a boiler which is above rather than on a level with its work, and you will find it more satisfactory than one which in hard weather must be driven, and the heat, with the increased current, more rapidly escaping by the fire.

MANURING (W. H. S.).—Fowl's dung may be used for Onions, 3 cwt. per square yard, sprinkled on the surface after the seed is sown. Salt and lime make a good compost for Potatoes, five bushels of each to an acre. Gypsum has been applied beneficially to Potatoes, 5 cwt. per acre.

PIGEON'S DUNG (Colombo).—Keep it dry, and use it as fresh as you can. It is a very powerful manure. Spread it very thinly, and dig it in at once where the crop is to be inserted.

NAMES OF FRUITS (R. Owing).—Bess Peel. We do not recognise the round red one. (*Commonwealth Subscriber*).—1, not known; 2, Baxter's Pearmain; 3, Lodgemore Nonspareil; 4, not known.

POULTRY, BEE, AND PIGEON CHRONICLE.

SILKIES.

By REGINALD S. S. WOODGATE.

PART 8.

ALTHOUGH, as we previously stated, we prefer to breed from cockerels and two-year-old hens, still old birds must not be despised in any way, for their continued virility is surprising; we know an eight-year-old bird, some chickens of which found their way into the prize lists last year. This is a fact worthy of notice, for so many of the other breeds are weakened and dull, and are not of any use in the breeding pens after the third or fourth year at most. Silkies, too, when they become two years old are frequently subject to fits of giddiness, and sometimes seem unable to see their food from these chronic attacks; but strange to say, we have never found this go against their productive powers, and a cock we once had so was the father of most of the champions of his year. We have never been able to cure it. For exhibition, Silkies require no especial preparation beyond a good wash. This, however, is essential; for from their fluffiness and silky feathers they accumulate a great deal of dirt, and look when unwashed very bad in the exhibition pen. In washing them care has to be taken, for they are delicate in the water and we have often nearly lost them in their bath. The water rapidly seems to get the better of them, and then they will hang down their heads and die in your hands; but as soon as ever this failing seems coming on we plunge them into a tub of cold water which we have handy on purpose. The action of the cold water, desperate as the remedy may seem, generally seems to recover them. We never use now any preparation such as borax, or blue, or lime, or those quack things to make adult birds white, for clean warm water and white curd soap should do everything. If, however, they fail, the birds are either bad in colour by nature or burnt by the sun and winds, and nothing will then ever bleach them—at least so we find, and we have spent much time in the cultivation of white poultry. They want to be dried by a slow fire, and to be first well rinsed of all soap. A very hot fire will scorch their faces and blister their lobes, which would most likely ruin them for successful exhibition for ever. When they are dry they should be well combed with a coarsely-toothed comb, and their crests brushed back with a hard brush.

In washing them, however, there is one thing which all must guard against. If the water is too hot or they are placed by a hot fire their leg feathers are very liable to come out. This may seem unaccountable, but so it is, and all Silky breeders will testify to it. We suppose that the growth of these feathers is

very delicate, and that they feel the influence of the hot water. We know of several instances where this moulting of the leg-feathering has caused much annoyance, but one illustration will suffice. In November, 1878, we were with Mr. Darby at Stanley Hall, Bridgworth, helping to prepare the birds for Bingley Hall. Among the other birds to be made ready was a pair of Silkies; they were selected because of their leg feathers, and were washed by the attendant. As they seemed to be suffering from their bath they were removed from the poultry-room fire to one of the indoor rooms, and there as they dried lying by the fire, before the eyes of all spectators one feather after another fell out till they were almost bare on the legs when dry. Then they were out of the question for the Show, so another pen had to be substituted at the last minute. Not only hot water have we known bring this sudden moulting on, but incarceration in a warm exhibition room or in a basket, or even when the hen is herself incubating. We have noticed it, too, more especially in the hens than the cocks. As a remedy we always tie bandages of linen rags tightly round the legs of the birds to be washed, and do not remove them till the lavatory process is over. We have found, too, rags dipped in cold water and tied round the legs strengthen the leg-feathering. We have used, too, with success a preparation originally given by Mr. Erasmus Wilson for the promoting the growth of and strengthening the roots of the hair; but this is an expensive preparation, which makes it of less use than it would otherwise be.

As the breed now is we think fanciers have to turn their attention to crests, combs, and shape. The five toes seem now understood, and rarely do birds come into the prize lists which have not their claws as well put on as a Dorking; but we see birds winning which are not fluffy enough and which are bad in comb. So lately as the last Crystal Palace Show we saw the first-prize pullet there with a pike to the back of its comb like a Hamburg hen's. This is quite wrong and very ugly; still it escapes notice, for at the Oxford Show, too, a pen was highly commended which had this failing. We consider it a disqualification and would unhesitatingly pass any such combed bird; for the warty-shaped mulberry comb is one of the points of the breed, and any other should be as much a disqualification as vulture hooks in the breed are.

When we look back and see how this pretty little breed has been rescued from becoming a red-combed, lanky, and ugly bird, we are very glad, for only five years ago no one seemed to know what a perfect specimen should be like; and it was not till the perfect and purest birds came from Japan, which bred true to every point, that we were able to lay down the table of required points; and we are glad, too, to notice that yearly they are becoming more recognized and more improved by being less crossed with spurious birds.

In conclusion, we may state that on page 98 in the second part, "wry-tailed" should have read "long-tailed." Of course, we owe thanks from wry-tailed specimens of any breed. We call attention to the printer's error, however, to prevent any mistake, as it is the wry-tailed cocks which breed the coarse and ugly birds that we often see about.

CUTTING THE COMBS OF COCKS.

I ONCE sold to a lady a pen of Game Bantams consisting of a dabbled cockerel and two hens. These birds, obeying Nature's law, increased and multiplied in their season; when I received an amusing and not unnatural complaint, that the birds could not be of a pure race because the little cockerels, unlike the parent bird, had combs and wattles. After hearing an explanation, that to make him quite fashionable the little gentleman sold to her had been shorn of his comb, &c., my fair correspondent condemned the fashion as cruel and senseless, and applied to its former owner no very complimentary epithets for permitting the mutilation; and she was right.

I cannot say with "WILKINSON BACON" that I am "glad to see that a case has recently been brought before the Magistrates in regard to the dubbing of the larger breed;" for when we consider that all the shows, Crystal Palace included, encourage and countenance the practice, I think it very hard that proceedings should be instituted against an unfortunate and comparatively obscure individual, and that an officer of one of our leading exhibitions should appear as a witness for the prosecution. Exhibitions which denounce anathemas against trimming, and yet countenance and encourage that which is nothing but trimming, cannot in my opinion be held free from blame in the matter. If it be desirable—which I very much question—to bring the strong arm of the law to bear upon the subject, surely it would be more straightforward, more manly, to select one of our large breeders and exhibitors of Game fowls as the victim. I said above that our shows encourage the practice, and I said it advisedly, for I much doubt whether an undubbed mature bird would win at any of our leading shows, *ceteris paribus*. Taking, therefore, everything into consideration, I must confess that I was pleased with the decision of the Sittingbourne bench.

Yet I should be glad to see the practice abolished. It may be comparatively easily done. At the suggestion of Mr. Fred. Crook (all honour to him for the same) a lady, conspicuous for active benevolence and large-heartedness extended alike to man and all animate creation, offered prizes at the Crystal Palace Show of 1875 for undubbed Game and Game Bantams. Though I feared that most of the birds shown in this class would be dubbed on their return home to fit them to struggle for the honours at other shows, I hailed the event with gladness, as being the insertion of the thin end of the wedge. Let the Palace Committee, then, drive it farther, and make it this year a *sine qua non* that in the classes for Game and Game Bantam cock-reels hatched in 1876 the birds must be shown undubbed, or in other words, that birds in these classes if trimmed in any way will be instantly disqualified. In the following year let them drive the wedge quite home, and treat all birds deprived of comb and wattles as trimmed. Other societies will soon follow the lead of the Great National, and dubbing will be a thing of the past.

When Game birds were bred for the arena dubbing was a necessary, perhaps a merciful operation, if the term can be applied to anything connected with the brutalising and degrading sport. Cock-fighting as a national pastime has happily passed away, and with it all necessity for cutting off the combs and wattles of Game cocks. I am only surprised that the senseless practice—senseless because there is no show of reason in its behalf—has so long survived. And is there not every reason against the practice?—a practice which in the more peaceful struggle for the victory in the show pen places the good-combed bird on a level with his bad-combed rival in the hands of a skillful operator. Many and many a winner of coveted laurels would have had to content himself with a third place or high commendation had he not left his comb behind him.

Do away with dubbing, and Game breeders will have another point to breed for, judges another point to consider. Both will be equal to the emergency. We shall then see the aristocrat of the poultry yard at the annual Palace levée arrayed in the coronet with which Nature has adorned him, and the great blot of cruelty will be wiped from the fair escutcheon of the fancy. —SUNNY PARSON.

GAME BANTAMS, AND DUBBING GAME.

"WILTSHIRE RECTOR" quotes the entries at Bristol as a proof that Game Bantams have found their level, which he insinuates is about the equal of Black Bantams. Now, one show is hardly a fair test as to popularity, and such a late one as Bristol more especially. At the Crystal Palace there were thirty-four Black Red Bantam cocks and twenty-seven Black Red Bantam hens against sixteen Black Bantams in pairs. This can be partly accounted for by the liberal classification of the Game, and the reverse will tell at Bristol, where Blacks have the advantage; but still, put them both equal and Game are decidedly the most popular.

Then, if you take a class of Black Bantams, how many are real Blacks with fanned tails and dropped wings? Why, nearly half, and they sometimes win. They are neither more nor less than Black Game Bantams with rose combs and white ears. If someone was to offer a cup for the best Black Game Bantams, it would be a good way for breeders to try for Blacks, and turn the birds with faulty combs, ears, &c., into Black Game.

Now for the dubbing. "WILTSHIRE RECTOR" begins by an unimportant mistake: the Sittingbourne trial is about "Bantams," not "large Game," or so the Kentish journal says. Then he suggests that as they are ladies' pets they might be shown dubbed or not dubbed. Well, so they might, and no really good judge would care whether a bird was dubbed or not if he had a good head. The true test of a head is the depth from crown to end of jawbone, if I may call it so. I have not studied anatomy sufficiently to be sure what the name is, but I mean the continuation of the lower mandible.

The real reason that we want exhibition birds dubbed is this: If a bird is dubbed he can be taken off his run with two or three others, and when he returns can be put down again, and they will soon settle themselves. There will perhaps be a spar or two, but the fags soon recognize their master; whereas, if they get a taste of blood in the first fly (and no pure Game fowl will give in after that, to say nothing of the torture of having their combs mauled, which hurts far worse than dubbing), how long could a bird be kept with his comb perfect? It is bad enough to have to keep them in feather with the rough handling they get sometimes.

There are many mistaken ideas among those who do not keep Game on the subject of dubbing. I have often been asked, "How ever can you stand having your pets dubbed? Does not skinning the throat hurt very much?" I rather astonished a friend of mine by showing him a bird on his run that had been dubbed two days. There was not a sign about the bird that he was not in the most blooming condition, with the exception of three narrow scars where the comb and wattles had been cut

off. No one who knows anything of them would dream of skinning the throat. It is not only perfectly needless, but actually spoils the whole shape of a bird's head. The less you cut off to a certain point the better the bird looks. Of course the comb must be cut level with the head, but there is no need to flay the top of the head.

I have no wish to stand-up for cock-fighting; it unquestionably is one of the worst forms of gambling, and for that reason is certainly deserving of being put down; but I must say that I cannot see as much cruelty in letting two cocks get to each other as in coursing a wretched hare with two dogs, each its superior. The cocks do not want any urging to make them fight, but will do it fully at any time or place; it is "in them," and they do not want teaching. What "WILTSHIRE RECTOR" means by saying that "once let all Game cocks be dubbed, and cock-fighting is for ever done away with" I do not know; but if he thinks that by not dubbing Game fowls he will prevent their fighting, he will find he has made a mistake. This is worse than the "bread-and-milk theory." In conclusion let me say that I quite agree with "WILTSHIRE RECTOR" about the cruelty of our ancestors, but I do not include dubbing as a trace of it. It benefits the bird all his after-life, and the pain is small, as the comb is not nearly so sensitive as other parts of the body.

Let me recommend "WILTSHIRE RECTOR" to devote some of his surplus energies to prevent the "carving" and "stitching" that is performed on Hamburgs and Spanish. They are only tortured to please the eye, while Game are dubbed because it is essential for their welfare. If I was never going to exhibit again I should dub just as much as I do now—that is, all the stags I propose keeping.—FITZ.

BOURNEMOUTH POULTRY SHOW.

The south of England is not rich in poultry shows, and we welcome this new one cordially. The Show was held in the Assembly Rooms, where the light was good and the birds appeared to advantage. The quality was not very superior, and the breeding season evidently kept many of the best birds at home. Mr. John Martin of Fatabull, Wolverhampton, awarded the poultry prizes, and we did not hear one word against any of his awards. Mr. Esquilant judged the Pigeons, and made good work with rather a severe job, as some of the classes were very heavy.

Dorkings had two classes, and came in good numbers. A fine pen of Coloured won the cup; the cock a deep-bodied bird with a grand hen of great size and of beautiful colour. The second cock was also large and very good in comb and colour. In the next class Silver-Grays of great excellence were first. The cock charming in colour and looking very bright, but he had rather white earlobes. Good Whites were second and third with not much between them. Mr. Cresswell's pen was empty. Light *Brahmas* were not a very gay lot. The first old hen was the best bird in the four classes; her colour was good and hackles very dark, and with these points she was very large and well-feathered. Darks were perhaps better, the hens were better than the cocks. A good pullet of very distinct pencilling was first. Third went to a good and cheap hen, which we liked better than the second pullet, for the latter was rather too pale on the breast. In *Cochins* a nice pen of old Buffs were first; the hen of good, clear, and even colour. Second went to a well-grown cockerel of pretty colour, with a fair old hen. In Partridge the first old cock was a large bird, but he did not look quite well when we saw him. In *Game* the cup went to fine Brown Reds; the cock splendid in head and of grand shape and style. We admired, too, very much the first Piles, for they were bold in carriage and neat in head. *Spanish* made about the ordinary show. The first cock was large in face and fair in comb, with a nice hen, and we quite liked the award. In the *French*, *Crêves* of great excellence were first, being very large and deep in body, and of raven blackness. In *Houdans* the hens were better than the cocks, but we have often noticed this at other shows. *Hamburgs* really mustered very creditably. The cup went to good Golden-pencils. The first Gold-spangles, however, must have been close on their heels. The Silver-pencilled were the weakest of all. We liked the markings and head of the third-prize Golden-pencilled pullet, and the first Golden-spangled cock was a grand bird in every way, his comb and colour being first-rate. *Leghorns* only made two pens, and only one prize was awarded. We thought them equally poor, liking, of the four birds in the two pens, Mr. Kitehen's pullet best, but her mate's comb threw them out. Neither had good lobes, and we thought their legs should have been of a deeper yellow. *Bantams* were better in quality than numbers, though some nice Blacks were shown. The Black *Ducks* were in a good light, and many of the pens seemed of equal merit. The winners were of beautiful colour. *Polands* were a grand lot. Splendid Silvers with huge crests first; a marvellous pen of Blacks second, perhaps as good as any pen out for some seasons; and third fine Silvers. There was a pen of *Golden* (Boothby), and a pen of Blacks (Edwards), which we liked,

however, quite as well as the third Silvers. The Variety class was one of the best classes in the Show. White Cochins of great merit were first, but it was a crying disgrace to the Society not to give this breed a class and to let it go into the "refuge." Indian Jungle fowls were second and Black Hamburgs third; pens of almost every other conceivable breed deservedly coming in for high commendations.

The Pigeons were chiefly noticeable for the stud of Mr. Maynard and the Dragons and Fantails; the latter were wonderfully nice. Turbits we thought not up to the usual standard. A lovely Red Jacobin was first in good competition; and in Tumblers a pretty Almond was the winner. Good Arch-angels won first in the Variety class, and Scandaroons second.

We noticed on nearly every pen in the whole Show cards stating the birds were fed and reared on Spratt's food. This is becoming a nuisance, for many of the birds there had never, we heard, tasted one scrap of this food, and yet were ticketed as fed upon it. Of one pen especially we heard the owner say that it had been reared on Dear's food, and never seen Spratt's mixture. We do not say this for one instant disparaging the food, for the value is simply incalculable, but care should be taken in not distributing these tickets on the pens in too haphazard a way.

The *Cage Birds* made a good show. Among the Canaries the most noticeable was the Ticked Belgian cock of Mrs. Holmes. This bird won the cup, and deserved it, for his shape is simply perfect. The British bird collections were very interesting, but there seemed to be great doubt as to what should comprise the collection, for some cages had twelve varieties, others twelve pairs, and one twenty-four birds, which were not all pairs. Mr. Turner Turner won first with a splendid Raven in grand plumage. Mrs. Drummond exhibited her birds in beautiful condition, but her collection of British birds seemed hardly to obtain its fair deserts.

We must mention, too, that the Hon. Secretary paid anyone their prizes in the room who asked for them, and also the money from the sale of any specimens. This is a good plan, and has already made the Society many friends.

[We have received a list of the prizes awarded, but as it is printed without naming the varieties we do not insert it. A more troublesome form could not be adopted.]

THE CRYSTAL PALACE BIRD SHOW.

The thirteenth annual Bird Show opened on Thursday, the 18th instant. Several of the classes were not so extensively filled as at the 1875 exhibition, but there were others which supplied the deficiency.

The entries of 1875, including duplicate numbers, were 1493, whilst those for 1876 reached the unprecedented number of 1501. The quality of the Norwich birds, Clear, Even-marked, and Ticked, were equal to past exhibits, and the like may be said of the Belgians, London Fancy, Lizards, Cinnamon, Yorkshire, Crested, and the Mules (of the Goldfinch and Canary, and Linnet and Canary crosses), the latter classes keeping up the high reputation of the Palace Show.

The special money prize of £1 was won by Messrs. Mackley of Norwich, as the most successful exhibitors in several of the Norwich classes; whilst the silver cup was won by Mr. J. Doel of Plymouth. First-class silver medals were won by Messrs. G. and J. Mackley (2), and Mr. J. Doel; and second-prize silver medals by Mr. R. J. Pope of Brighton, and Mr. J. Adams (2), which latter exhibitor also won a copy of Mr. R. L. Wallace's "Canary Book," two of which books also fell to the lots of Mr. G. Wones and Mr. L. U. Gill.

The Exhibition was not only larger but of more interest generally to lovers of cage birds, on account of the many rare specimens exhibited, and likewise respecting the seed question. This year prizes were offered for samples of seed, besides other food for insectivorous birds. Prizes were also awarded for nest-boxes—new features certainly respecting birds and bird shows. This I look upon as a step in the right direction.

Concerning the three classes for "not cayenne pepper-fed" birds, they were exceedingly well responded to by many fanciers who prefer birds clothed in a garb different to those pepper fed. In the three classes there were ninety entries, and it would be well if committees or others who have the framing of schedules and the getting-up of bird exhibitions would take the hint and provide classes for non-pepper-fed Norwich birds, for to a certainty, although birds may be made to swallow a given quantity of the heating condiment, many sterling fanciers have objections to it for more than one or two reasons. But the feature in the present Palace Show of classes for non-peppered birds is not altogether new, an extra prize of £1 having for the past two or three shows at the Crystal Palace been awarded to the winners of the most points in the first six classes of Norwich birds not of high colour.

CANARIES.—Norwich.—*Clear Yellow*.—1, J. Athersuch. 2, G. & J. Mackley. 3 and 5, R. P. Pope. 6, W. Lewis. *etc.* G. & J. Mackley (3), W. Havers, J. Athersuch (2), J. Benson, J. Doel. *Clear Buff*.—1 and 4, G. & J. Mackley. Equal 2, G. & J. Mackley, Martin & Griffin. 3, J. Doel. 5, J. Athersuch. *etc.*

G. & J. Mackley, Moore & Wynne, J. T. Galey, Fairbrass & Caplin, J. Ather such (2), Brown & Gayton, Mrs. Judd. *Evenly-marked Yellow*.—1, Brown and Gayton. 2, J. Athersuch. Extra 2, G. & J. Mackley. 3, Martin & Griffin. *etc.* G. & J. Mackley (2), W. Havers. *Evenly-marked or Variegated Buff*.—1 and 2, G. & J. Mackley. 3, Fairbrass & Caplin. *etc.* G. & J. Mackley (2), S. Tomes, Brown & Gayton. *Ticked, Unevenly-marked, and Variegated Yellow*.—1, W. Smith. 2, G. & J. Mackley. 3, J. Athersuch. *etc.* G. & J. Mackley (2), J. Athersuch (2). *Ticked, Unevenly-marked, and Variegated Buff*.—1 and 2, J. Athersuch. 3, G. & J. Mackley. 4, J. Mackley (3). *J. Athersuch. Clear Yellow not cayenne pepper fed*.—1 (Medal), G. & J. Mackley. 2 (Medal), R. J. Pope. 3, J. Adams. *etc.* G. F. Dunn, W. Havers, J. Adams, J. Benson (2), S. Tomes, W. Shakespeare, J. Tarr, Mrs. Shelley. *Evenly-marked Yellow, not cayenne-pepper fed*.—1 (Medal), G. & J. Mackley. 2 (Medal), J. Adams. 3, G. Wones. *etc.* J. Yallop. C. J. Salt. *Unevenly-marked Yellow, not cayenne-pepper fed*.—1 (Medal), J. Doel. 2 (Medal), J. Adams. 3, W. G. Gil. *Evenly-marked Crested Buff*.—1, Fairbrass & Caplin. 2, W. Havers. 3, R. J. Pope. *Evenly-marked Crested Buff*.—1, J. Yallop. 2, G. & J. Mackley. Extra 2, J. Torr, G. & J. Mackley. *etc.* J. Yallop, G. & J. Mackley (2). *Unevenly-marked and Variegated Crested Yellow*.—1, G. Russell. 2 and 3, F. Woodward. *Unevenly-marked and Variegated Crested Buff*.—1, S. Stratford. Equal 2, W. J. Hampton (2). 3, W. Corden. *etc.* J. Yallop. *Clear Body, with Clear, Grey, or Dark Crest, irrespective of colour*.—1 and 5, W. Redmore. 2 and Extra, J. Mackley. Extra 3, J. Adams. *etc.* G. & J. Mackley. 3, E. Russell, Moore and Wyndham, H. Kidnerman. *Belgian*.—*Clear and Ticked Yellow*.—1, T. M. Reid. 2, J. Doel. Equal 3, Mrs. Shelley, J. Doel. *etc.* J. Rutter, J. Doel (2). *Clear and Ticked Buff*.—1 and Extra 3, J. Rutter. 2, Cleminson & Elletson. 3, Rev. H. F. Hamilton. *etc.* H. Davies, J. Rutter, J. Doel, T. M. Reid. *Variegated, irrespective of colour*.—1, 2, 3, and *etc.* J. Rutter. *LONDON FANCY*.—*Jonque*.—1, 2, and 3, J. & W. Waller. *etc.* J. & W. Waller (3). *W. Extra*.—2, J. & W. Waller. *Mealy*.—1 and 2, J. & W. Waller. 3, W. Broderick. *etc.* J. & W. Waller (2). *J. PRISE*.—*LIZARD*.—*Golden-spangled*.—1 and 3, Fairbrass and Caplin. 2, S. Bunting. *etc.* S. Bunting, Fairbrass & Caplin. *Silver-spangled*.—1 and 2, Fairbrass & Caplin. 3, T. Smethurst. *etc.* T. Smethurst, Fairbrass and Caplin. *Golden-spangled with Broken Caps*.—1, 2, 3, and *etc.* Fairbrass and Caplin. *Silver-spangled with Broken Caps*.—1 and 3, Fairbrass & Caplin. 2, W. J. Hampton. *etc.* S. Bunting (2), Fairbrass & Caplin. *YORKSHIRE*.—*Clear, Marked, or Variegated, irrespective of colour*.—1, 2, and 3, G. & J. Mackley. 4, J. Adams. *etc.* J. Athersuch. *Clear Yellow*.—1, G. & J. Mackley. 2, J. Thackrey. 3, G. A. Watson. *etc.* T. M. Reid. *Clear Buff*.—1, 2, and 3, J. Thackrey. *etc.* G. A. Watson. *Variegated Yellow*.—1, 2, and 3, J. Thackrey. *Variegated Buff*.—1, 2, 3, and *etc.* J. Thackrey. *CINNAMON*.—*Yellow, high colour*.—1, Fairbrass & Caplin. 2 and 3, J. Athersuch. *Buff, high colour*.—1, 2, and 3, J. Adams. *etc.* W. Stringer. *Yellow, not high colour*.—1 and 3, J. & W. Waller. 2, F. Willis. *etc.* J. Dennis. *Buff, not high colour*.—1 and 3, J. & W. Waller. 2, J. Adams. *etc.* J. Athersuch. Extra 3, W. Smith. *etc.* R. J. Pope, S. Tomes. *Marked or Variegated, irrespective of colour*.—1, W. & C. Burmiston. 2, T. Tenniswood. 3, Brown & Gayton. *etc.* S. Stratford, G. & J. Mackley. *Any other variety of Canary*.—1, W. J. Hampton (Ticked Buff Copy). 2 and Equal 2, J. Yallop (Plain-headed Buff and Copy Crested). 3, Miss James (Scotch Fancy). Extra 3, G. & J. Mackley (Clear Yellow Copy Chester Copy, Plainhead). *etc.* J. Yallop (Plain-headed Buff and Copy Crested). *BEST SIX LIZARDS IN ONE CAGE*.—*Best Six Lizards in One Cage, irrespective of colour*.—1, Fairbrass & Caplin. 2, T. Smethurst. *Miscellaneous*.—Equal, T. Alwin (Linnet and Greenfinch Mule), Stroud & Goode (Goldfinch and Greenfinch Mule).

MULES.—*GOLDFINCH*.—*Best Six in One Cage*.—1, J. Doel. 2, J. A. Sleep. 3, A. Boatwright. *Evenly-marked Yellow*.—1 and 3, J. Doel. 2, J. Stevens. *etc.* S. Bunting. *Evenly-marked Buff*.—1, Extra 2 and 3, J. Stevens. 4, J. Stevens. 3, S. Bunting. *etc.* S. Bunting. *Any other class of Yellow*.—1, S. Bunting. Extra 2, J. Baxter. 3 and Extra 3, J. Doel. *etc.* J. Doel, J. Benson. *Dark Yellow*.—1, S. Bunting. 2 and 3, Moore & Wynne. *etc.* G. Cox. *Dark Mealy*.—1 and *etc.* G. Cox. 2, G. & J. Mackley. 3, S. Bunting. *LINNET*.—1 and *etc.* J. Spence. 2 and 3, J. Stevens. *Dark*.—1, W. & C. Burmiston. 2, T. Tenniswood. 3, G. Cox. *etc.* H. Miles. *Any other variety of Canary*.—1, J. Stevens (Greenfinch Mule). 2, J. Baxter (Siskin Mule). 3, J. Drake (Siskin and Canary).

BRITISH BIRDS.—*Bullfinch*.—1, Fairbrass & Caplin. 2, G. Cox. *Goldfinch*.—1, J. Yallop. 2, E. & R. Ward. *Chaffinch*.—1, J. Simmet. 2, C. Varette. *etc.* R. J. Troake. *Linnet*.—1, J. Drake. 2, R. Pearson. *Redpole or Siskin*.—1, J. R. Thirkettle. 2, A. & C. Newmarch. *etc.* G. & J. Mackley. *Siskin*.—1, J. R. Thirkettle. 2, A. & C. Newmarch. 3, J. Mackley. *etc.* G. & J. Mackley. *Robin*.—1, H. Tinsley. 2, G. Warren. *Blackbird*.—1, A. & C. Newmarch. 2, J. Wright. *Starling*.—1, Mrs. Judd. 2, Cleminson & Elletson. *Magpie*.—1, Mrs. J. Fogg. *Jay*.—1, J. Drake. *Jackdaw*.—1, H. Small. 2, E. Todd. *Any other variety*.—Prize, W. Hunt (Hybrid between Blackbird and Thrush). W. K. Taunton (Raven), J. Young (Nuthatch), G. Cox. Miss N. Mohr (Hedge Sparrow, Bramble Finch, Bearded Tits, and Grey or Dun Wagtail Blue), Miss R. J. Troake (Greenfinch), G. Stoker (Variegated Chaffinch), Brown & Gayton (Lesser Sparrow), W. Sparrow (Eagle Owl and Nuthatch), S. Arthur (Black-and-white Blackbird). *Blackcap*.—1, Miss N. Hutton. 2, J. Hutton. *Nightingale*.—Equal 1, O. A. Watts, H. B. Tinsley. 2, J. Hutton. *Any other variety*.—Prize, J. Young (Willow Wren), H. B. Tinsley (Yellow and Red Wagtails), Miss N. Mohr (Redstart).

FOREIGN BIRDS.—*Red-headed Cardinal*.—1, Capt. W. Ramsey. *Virginian Nightingale*.—1, A. & C. Newmarch. *Any variety of Waxbill*.—1, J. Drake. *etc.* C. W. Gedney. *Java Sparrows*.—1, E. Sweeting. 2, Small Doves.—1, J. Drake. *Barbary or Turtle Doves*.—1, Miss B. Booth. *etc.* W. Hunt. *Loose Doves*.—1, Mrs. Henderson. *Australian Grass Parakeets*.—1, J. Drake. *Cockateils*.—1, A. & C. Newmarch. *Any other variety of Small Parrots or Parakeets*.—1, J. Drake. *Ring-necked or Indian Parakeets*.—1, Miss Catt. *King Parrots*.—1, H. B. Tinsley. *Green or any other variety of large Parrots, except Grey*.—1, Mrs. Holthoir. 2, J. Goslin. 3, Miss W. Pope. *Grey Parrots*.—1, G. Cheney. 2, F. Segrave. *etc.* J. Skinner, F. Segrave. *Cockatoo, any other variety*.—1, A. & C. Newmarch. *Cockatoo, or Rose breasted*.—1 and 2, A. & C. Newmarch. *Cockatoo, Lemon or Orange-crested*.—1, H. Cross. 2, M. George. *Any other variety*.—Prize, J. Groom (Yellow-bellied Leiothrix), Oakey and Bamber (American Blue Robin), J. Drake (Laughing Jackass, and Toucan).

CAGES.—1, T. Alwin (Show Cage, for easy packing and cleaning). 2, F. Saunders (Show Cage). 3, W. Smith (Improved Cage).

SPECIMENS OF FOOD FOR CAGE BIRDS.—Gold Medal, R. A. Pratt (Food and Seed). 2, G. Markwick (Markwick's Bird Seed Mixture; Markwick's German Paste).

COLLECTION OF NEST BOXES FOR CAGE AND WILD BIRDS.—Gold Medal, H. E. Fruehauf (for Cage Birds). 2, J. Groom (Nest Box for Parrots).

JUDGES.—Mr. Harrison Weir, Mr. J. Jenner Weir, Mr. G. J. Barnesby, Mr. A. Willmore, Mr. R. L. Wallace.

EAST OF SCOTLAND BEE-KEEPERS' SOCIETY.—This Society was established at Dundee in January, 1876, by a number of gentlemen interested in and practically acquainted with bee-keeping, with a view to its extension and improvement on humane and profitable methods. While seeking to foster a love of the science as a source of pleasure and profit among all classes, it seeks specially to benefit the rural and suburban cottager and artisan. The general meetings of the Society will afford an excellent

opportunity for the exchange of useful information among the members; papers will be read and discussions held on the natural history and proper management of the hive bee; the advice of skilled bee-keepers will be readily given to inquirers, and objects of interest and useful appliances will be shown. The subscription is only 2s. 6d. annually.

CAGE BIRDS AND THE FOOD THEY EAT.

No. 1.

For the past two years in particular food for Canaries and other birds has been a matter of great importance to fanciers, especially canary seed, which has been so extravagantly high in price as to drive many bird-keepers to their wit's end in finding a substitute for it. One fact is beyond doubt—namely, that of bringing into more general use millet seed, which (for a great number of years prior to the recent famine prices of canary seed) was used for Canaries especially in much less proportion than before, and at the commencement of the eighteenth century.

I am pleased to find that special attention is just now being devoted to the food of birds, and no doubt some benefit may accrue from the novel example set forth by the Crystal Palace Company, who at their annual Bird Show, which commences to-day, have offered premiums in the shape of a gold medal as a first-prize, and a money prize for the second, for the best specimens of seed and food appropriate for cage birds.

From an old treatise on Canaries written in French by M. Hervieux, and translated into English, I will give a few extracts of the doings and mode of treatment adopted by fanciers in or about the year 1718. The work in question was printed for Bernard Lintot at the "Cross Keys," between the Temple Gates; and Benjamin Barker and Charles King, in Westminster Hall, in the above-named year. The extracts now quoted will set forth in the writer's own style the various seeds then used, describing the names of such as they were then spelt, the qualities and benefits derived, and the prices realised. M. Hervieux says:—

"I think it will not be improper here to set down the names and qualities of all the seeds curious persons use in feeding of their Canary birds; and for observing of some methods herein I will begin with those seeds which are most necessary for them, and will afterwards proceed to those they may live without.

"The names of seeds proper for Canary birds: rape seed, millet, hemp seed, canary seed, pink seed, lettuce seed, silverweed or tansy seed, plantain seed.

"*Rape seed* is a very small round seed, coming from a plant of the same name. I name it first because it is the most necessary seed for feeding our Canary birds, and they may live with this alone, though they have none of the others, as has been said before. There are several sorts of it; one of them is bigger and blacker than the true rape seed, and commonly kills all the Canary birds it is given to, by reason of its bitterness and other ill qualities. The best is that which is smaller than this bad sort I have last spoken of. It is not quite black, but inclines a little to purple, is very sweet, and has none of the bitterness of the other sorts. It is called French rape seed [at the present day understood by the name of German rape], and that is the best that can be given to birds. It has a nourishing and cooling quality at the same time, so that a bird which lives altogether upon this seed is not apt to grow so fat as those that eat much of the others above-mentioned. When it is too old, as of three or four years, it generally has no more scent than dust, nor scarce any taste, and therefore does not so well nourish the birds that eat of it. On the other hand, when it is too new, though never so good it surfeits them. It must be at least six months old before you give it to your Canary birds; and to prevent being cheated you must lay-in a year's provision before March, so that if it happens to be new it will be at least eight or nine months old, so that it cannot be prejudicial to your birds. To be provided with seed for a year without being obliged to buy again within the time, you need only take nine or ten litrons [a litron is somewhat more than an English pint] for every Canary bird you design to keep, and you will find that enough for the year.

"*Millet*.—A sort of small white grain, round, and at least twice as big as the rape seed. The whitest is the best. There is a yellow sort, which is only good for poultry. The best millet is that of the province of Anjou, on the river Loire, in France. It is sweeter and pleasanter than the rape seed. Its qualities are to nourish, to warm, and to fatten considerably, and therefore curious persons must take heed not to give their Canary birds too much of it; nay, sometimes they must be made to fast. This millet serves for several other uses, which is not to our purpose to take notice of.

"*Hemp seed* is the seed of the plant of the same name. It is twice as big as the millet, and grey. The best is the middling size and bright. Its quality is to nourish, fatten, and heat much more than the millet, and therefore very little of it is to be given to Canary birds, unless in the sharp winter season, at which time it is good for them. The best sort has somewhat

the taste of a small nut, and therefore the Canary birds are very fond of it.

"*The Canary seed* is a yellowish grain, not so thick as the millet, but longer, pointed at both ends. Its quality is to fatten and warm Canary birds. It has almost the same taste as the millet. Many curious persons never give their Canary birds any of it, pretending that it burns their bowels; but it can do them no harm provided they are not continually used to it. I have only a little pinch given them sometimes."

Thus it will be seen from the four above-mentioned seeds M. Hervieux attaches the least importance to the use of Canary seed.—G. J. BARNESBY.

A NEW BEE.

SOUNDS of another new bee come from afar. The Alpine or Ligurian bee has been in this country for many years. Some years after its introduction among us the little Egyptian was received. Some twelve months after it came, the late Mr. Woodbury informed me by private letter that another bee, very much larger than any other species known, was expected either from Australia or Africa, I forget which, but it never came. The new bee this time is an islander of Asia, called the Cyprian bee, and is said to be as much superior to the Ligurian as the Ligurian is to the common bee of our own country.

A gentleman has kindly offered to do his best to multiply stocks and send them to America if £100 be raised to cover expenses; and the question has been asked, Why not have the new bee here as well as in America? The question may well be asked, Why should Englishmen be behind American apirians? It may, for aught I know, be a very superior sort in many senses to our old sort and Ligurians, but we are not yet informed in what sense or way it is superior. A comparison has been drawn of its superiority over Ligurians as they are superior to our old friends. How much is that? Mr. George Fox and myself have watched the Ligurians ever since they were introduced without finding one feature of their superiority, or even the shadow of one. Last year the heaviest hives in Scotland that we heard of were filled by swarms of common bees. In England the best super that we know of was filled by common black bees and exhibited by Mr. Fox at the Crystal Palace Show.

I have been anxious for a public competition between the Ligurian and common bees, and tried to tempt the admirers of Ligurians to enter the arena, but without success. I can see nothing but gain to the public in a trial of this kind. If the old bees beat the Ligurians the bubble of their superiority will burst, and many clever apirians will begin to spend their time in a more satisfactory manner than in Ligurianising; and if the Ligurians run first the stupidity of myself and other stiff-necked men will be rebuked and corrected, if not altogether removed, and that very much to our advantage. I shall be gratified if arrangement be made for a public competition this year, such as Mr. Hales contemplates in his own garden by his own bees.

Doubtless the new bee, the Cyprian, will have a warm reception both here and in America, and owing to a wide-spread love of novelty in both countries there will be "a great run" for it. The love of novelty is implanted in the mind of man, and I most heartily vote for its gratification. To the gentleman, whoever he may be, on whom fell Mr. Woodbury's mantle, I would like to say, Please let us have the Cyprian.—A. PARRISAW.

HARVESTING HONEY.—No. 4.

SECTIONAL SUPERS.—In the current number of the American "Bee Journal" Mr. C. B. Isham has published instructions how to make his pretty little supers which I figured in my article of December 9th last. Slightly abridged, these instructions are to the following effect:—

The tops and bottoms may be of any kind of wood—soft preferred, but hard wood admits of polishing and making as ornamental as may be wished, especially useful when the variety is wanted for exhibition. Dress to proper thickness—say three-sixteenths of an inch—varying with size of box required, and cut entrance slots in bottom pieces; the metal corner is a seven-sixteenth-of-an-inch strap of tin bent at right angles and pronged at each end, making the length from shoulder to shoulder the same as length of glass for height of box; with prongs long enough to pass through wood; bend over, and make a square clinch as shown in top of super in cut. In each corner of wood, at proper distance from edge, make a narrow mortice for prong of tin corner to pass through, and inside from mortice, average thickness of glass distance, make an awl-hole in which to drive a three-eighths-of-an-inch brad to hold the glass from falling inwards.

Having cut the glass to the proper size the super is ready to put together. Through each mortice in the bottom wood pass the prong of tin corner, bending projection down flat on the outside surface, then stand on the bench or table with sides fronting you, and it is in position to receive the glass. First put in the sides, resting them in the respective corners of tins; then with

the right hand put the end glass in its place; now slip in the other end glass, for the present not giving it much attention. You are now ready for putting on the top (to which has been fastened guide comb), by taking it in your right hand and slipping one end on prongs just far enough to hold them together; then reversing the position of the hand change operations to the other end of the box, drawing the corners to place, inserting prongs on mortice the same as at the other end of the box, and press top squarely down till the points of the brads are even with the tops of the glass; then take the box in hand, and with a narrow stick inserted in slot crowd out the end glasses flush to place; press top on lightly and hammer down light to glass; clinch, and the box is completed. Three sizes are principally made as follows:—

For narrow single-comb box: wood, 6½ by 2½; glass, 5 by 6 and 5 by 2. For two combs: wood, 6½ by 4½; glass, 5 by 6 and 5 by 4. For three combs: wood, 6 by 6; glass, 5 by 5½ and 5 by 5½.

These small supers are used on any kind of moveable-comb hive by removing the crown-board and laying strips quarter of an inch thick across the frames for the boxes to rest upon; put on all the boxes the hive will hold, covering with a tight outside cap. In making quantities of these supers it is advisable to have a thin board pattern with mortice and nail holes in proper places, so fastened as to admit of slipping under it the wood to be morticed and bored. By driving your chisel through the pattern holes your wood will all be prepared alike, and provided your glasses are also cut accurately to gauge the supers can be very rapidly made. Figs. 39, 40, which represent "The American" moveable comb hive, will give a good example of how



Fig. 39.

sectional supers are filled. It will be noticed that the frames (which are removable from the side) do not reach the top of the hive by 2 inches, and in the space thus obtained are placed one tier of supers directly on the frames. When these supers are nearly filled they are gently lifted up, bees and all, and boxes with openings through both tops and bottoms are placed beneath, through which the bees pass to and from the boxes in which they are working. The difficulty of inducing bees to commence in new boxes after the first set is filled is thus overcome, and it is only necessary to remove the upper tier when finished, and elevate the lower boxes as before, to keep the bees constantly at work while the honey harvest lasts.—JOHN HUNTER, *Eaton Rice, Ealing.*

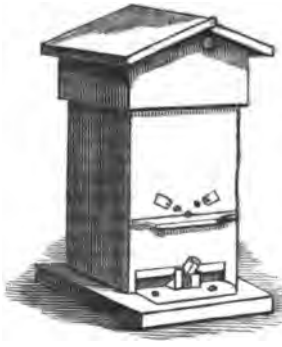


Fig. 40.

OUR LETTER BOX.

MARKING YOUNG CHICKENS (H. H.).—The younger they are when marked the better. Punch a hole with a strap-leather punch through the web of the wing. One brood may have one wing marked, the other brood both wings.

TUMBLER HEN'S SMALL EGGS (Old Bob Bidley).—We are afraid your hen Pigeon has done her work at seven years old; she might deserve the prefix of your own name. The first and last eggs of a bird are always the smallest. In a young one it is a sign the secretions are at fault, in an old one the functions are worn out. We can only advise you to attend to her diet. Give her bay salt, old Egyptian beans, and some pellets made of barley meal, with one quarter of powdered camphor, the whole mixed with milk, each the size of a small pea.

PATAGONIAN RABBIT BURROWING (C. E. A.).—We do not believe that Patagonian Rabbits would burrow their way out from any confinement. It is against their nature. Neither they nor the Silver-Gray burrow. It would be easy for the Silver-Gray or the Hare Rabbit to adopt the habit from their activity, and these bred between them and the wild Rabbits do so. The foreign Rabbits have more of the habit of the Hare, and squat or sit in forms all day.

HIVE WITH COMBS (J. O.).—The combs made by your swarm last year will be of great service to a swarm this year. As soon as a swarm shall be cast amongst the combs eggs will be rapidly set and honey rapidly gathered. Amongst such combs bees do an extraordinary amount of work for some days. When the combs become filled with brood many nurses are needed, and less honey is gathered.

REMOVING STOCKS (O. H. W.).—You should remove your hives now, at a time when all the bees are at home. Let both hives be placed in the new position as they stand to each other now. Confining the bees to their hives afterwards will do no good; but you may lay a small branch of a shrub on each flight board to attract the attention of the bees when they come out, and make them see and understand that an alteration has taken place. Not a bee will be lost by the change of position.

DYSENTERY IN BEES (A. B.).—We have never tried the remedy for dysentery which your friend recommends—viz., "A quart of syrup, with a gill of brandy and a spoonful of salt in it." If brandy affects bees as it does men, the remedy named would make your bees very jolly. For dysentery we use loaf sugar and pure water only, and have never lost anything else so efficacious. Bees without queens at this season are not very demonstrative; they do not search for them, or make manifest their loss by noisy piping, as they do on the death or loss of their queens. As queens are now laying, you will be able to ascertain by an interval examination whether your hive has brood in it or not. Some two years ago we gave a list of nearly one hundred plants which yield honey. All that you can raise from seed or by planting in your garden will not help your bees much. They will find plenty of honey in the flowers of the orchards, fields, and forests in your neighbourhood.

METHEOLOGICAL OBSERVATIONS.

CAMPDEN SQUARE, LONDON.

Lat. 51° 33' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.						WIND.
1874. Feb.	Barom- eter at Sea and Land Level.	Thyrmom- eter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature.		In sun.	On grass	
		Dry.	Wet.			Max.	Min.	Max.	Min.			
We. 16	29.679	48.7	44.0	W.	48.7	51.6	42.3	66.0	58.3	In.	0.100	
Th. 17	29.666	51.9	51.5	W.S.W.	50.2	54.8	48.3	57.9	48.3	0.084	0.084	
Fri. 18	29.581	51.5	46.7	S.W.	40.8	58.3	47.0	50.3	41.1	0.085	—	
Sat. 19	29.596	46.1	43.2	W.	42.6	53.0	44.7	58.1	41.1	0.084	0.084	
Sun. 20	29.655	41.8	38.3	E.	41.2	48.3	40.3	54.3	38.1	0.085	—	
Mo. 21	29.708	51.5	50.5	S.	43.0	53.9	41.1	58.9	40.1	0.085	—	
Tu. 22	29.680	50.0	48.0	W.S.W.	43.6	55.5	45.8	58.3	48.6	—	—	
Means	29.668	48.5	45.9		46.9	53.8	48.9	73.6	40.8	0.087	—	

REMARKS.

16th.—Rain commenced at 9.45, and continued till noon; very dull all day.
17th.—Rainy morning, and shower at times all day.
18th.—Fine morning; thunder about noon; showery afternoon; and very wet evening.
19th.—A very fine day throughout.
20th.—Fine morning; heavy rain soon after noon, continuing for two or three hours; showery afternoon and evening.
21st.—Rainy morning; showery day; very windy in the latter part, and at night.
22nd.—Windy in the night and early morning, but very fine all the early part of the day; rather showery towards evening, but very fine night.
Very much warmer than last week, nearly 15°; and also more showery and windy.—G. J. SYMONS.

COVENT GARDEN MARKET.—FEBRUARY 23.

Prices of all kinds of best fruit have an upward tendency, the supply getting shorter. The market is well stocked with early-sown vegetables, the Channel Islands sending good samples of Ashleaf Kidney Potatoes.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	0	0	Malberries.....	lb.	0	6	0
Apricots.....	dozen	0	0	0	Nectarines.....	dozen	0	0	0
Cherries.....	lb.	0	0	0	Oranges.....	✓ 100	6	0	0
Chestnuts.....	bushel	2	0	0	Peaches.....	dozen	0	0	0
Currants.....	✓ 100	0	0	0	Pears, Kitchen.....	dozen	0	0	0
Black.....	do.	0	0	0	Pears, dessert.....	dozen	2	0	0
Fig.....	dozen	0	0	0	Pine Apples.....	lb.	1	0	0
Filberts.....	lb.	0	0	0	Plums.....	✓ 100	0	0	0
Gobs.....	lb.	0	0	0	Quinces.....	bushel	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	0	0	0	Strawberries.....	lb.	0	0	0
Lemons.....	✓ 100	6	0	0	Walnuts.....	bushel	4	0	0
Melons.....	each	1	0	0	ditto.....	✓ 100	1	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	4	0	0	Leeks.....	bunch	0	4	0
Asparagus.....	✓ 100	6	0	0	Mushrooms.....	potl	1	0	0
French.....	bundle	1	0	0	Mustard & Cress.....	punnet	0	2	0
Beans, Kidney.....	✓ 100	2	0	0	Onions.....	bushel	3	0	0
Beet, Red.....	dozen	1	0	0	Peas.....	quart	0	0	0
Broccoli.....	dozen	0	0	0	Parsley.....	doz. bunches	3	0	0
Brussels Sprouts.....	dozen	1	0	0	Peas.....	dozen	0	0	0
Cabbage.....	dozen	1	0	0	Peas.....	quart	0	0	0
Carrots.....	bunch	0	4	0	Potatoes.....	bushel	2	0	0
Capicums.....	✓ 100	1	0	0	Kidney.....	do.	3	0	0
Cauliflower.....	dozen	2	0	0	New.....	lb.	1	0	0
Celery.....	bundle	1	0	0	Radiates.....	doz. bunches	1	0	0
Coleworts.....	doz. bunches	2	0	0	Rhubarb.....	bundle	0	0	0
Cumbers.....	dozen	1	0	0	Salads.....	dozen	0	0	0
Endive.....	dozen	1	0	0	Scorzonera.....	bundle	1	0	0
Fennel.....	bunch	0	2	0	Seakale.....	basket	1	0	0
Garlic.....	lb.	0	0	0	Shallots.....	lb.	0	0	0
Herbs.....	bunch	0	2	0	Spinach.....	bushel	4	0	0
Horseradish.....	bundle	4	0	0	Tomatoes.....	dozen	0	0	0
Lettuce.....	dozen	6	0	0	Turnips.....	bushel	0	4	0
French Cabbage.....	dozen	1	0	0	Vegetable Marrows.....	dozen	0	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MARCH 2-8, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.			
2	Tu	Royal Society at 8.30 P.M.	48.7	34.7	41.7	6	44	5	40	8	44	0	45	Days.	m.	a.
3	F	Royal Institution at 8 P.M.	49.9	33.3	41.0	6	43	5	42	9	19	2	12	6	12	2
4	S		49.7	31.5	40.6	6	40	5	44	10	9	3	31	8	11	49
5	SUN	1 SUNDAY IN LENT.	48.9	31.8	40.8	6	37	5	46	11	30	4	38	9	11	35
6	M	London Institution at 7 P.M.	48.6	32.2	40.4	6	36	5	47	0	45	5	16	10	11	30
7	Tu	Royal Medical and Chirurgical Society at 8 P.M.	49.1	32.4	40.7	6	33	5	49	2	14	5	46	11	11	6
8	W	Society of Arts at 8 P.M.	49.3	31.5	40.8	6	31	5	51	3	43	6	6	12	10	51

From observations taken near London during forty-three years, the average day temperature of the week is 49.1°; and its night temperature 32.5°.

NEW ROSES.



O buy a pig in a poke is a trifle compared to the buying of the new French Roses. I have over and over again bought every new French Rose that has been sent out, and certainly not one in twenty has been worth growing. The descriptions of the raisers are as much to be depended upon as the gushing language of the circulars of advertising wine merchants. The nutty, old in bottle, soft velvety of Messrs. Swipey & Co. are adjectives as delusive to us poor parsons as the superb, vigorous growers, pure transparent rose colours, quite a novel colour, beautiful satin Paeony Rose of the French Rose tints, are to rosarians. "Tis all," as a dissenting country cobbler called elastic-side boots with buttons on them, "tis all a deception."

Now, take the year before last. There were only two Roses out of the whole lot which were worth growing—Madame Marie Finger and Capitaine Christy. Last year I do not know that a single good Rose was sent out from France. With regard to Capitaine Christy, men bought that because it had received a first-class certificate at the Lyons Show; and this year there is a Rose sent out called Triomphe de France which has been (I presume at Lyons) exhibited as a seedling, and received its name from the Judges who awarded it a gold medal.

Here we have a Rose that we can safely buy; but looking through the list I can find no other with this diploma, and the only protection we have for the others are the names of the raisers. We can generally depend upon M. Lacharme, although I never can see the beauty of his wife (Madame Lacharme) which "D. Deal," raves about so (of course I refer to the Rose, and not the lady of the name). But taking the useful calendar of my friend Mr. Reynolds Hole as a guide, I find that very few of the raisers have of late years sent us an acquisition.

But when we turn to the English nurserymen the case is quite different; they, as a rule, never send out a Rose till they have proved it. Take Mr. George Paul for instance; he has given us S. Reynolds Hole, Wilson Saunders, Duke of Edinburgh, and Princess Mary of Cambridge. Mr. Turner, too, has sent out capital Roses, notably my namesake. And, by the way, I am happy to tell him that I find from my tailor that I am gradually assimilating my form to my namesake, and am really becoming globular. Oh, how I have been chaffed about the description! I have had every kind of paper sent me from the "Pall Mall" to the "Family Herald," with the same old chaff in it about my globular form. Well, I am a very good Rose at all events, and there is no form so beautiful as the globular.

Then Mr. Turner has three more good Roses this year—Oxonian, Miss Hassard, and Royal Standard. Mr. Cranston, too, has sent out a gem of the first water, one worthy of the great name—Sir Garnet Wolseley; and there are several more English novelties, which from the reputation of the raisers, no doubt, are worth buying, so

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that we really need not waste our money on French novelties. The purchase of these latter is a most severe annual tax to our leading nurserymen, and I am sure they would all be delighted if there was no demand for improved French novelties.—JOHN B. M. CAMM.

NEW AMARYLLISES, WITH CULTURAL NOTES.

THIS genus of stove and greenhouse plants has a very wide geographical distribution. Many of the species are merely valuable as botanical specimens, others of them are really splendid flowers, and when well grown form a gorgeous display in the plant stove or conservatory. The countries from which most of the popular species have been introduced are Brazil, which gives us *A. reticulata*, *psittacina*, *fulgida*, *aulica*, and others. From the Cape of Good Hope we have *A. pumilo*, *revoluta vittata*, and *vittata major*. There are also representatives of the genus to be found in the East and West Indies, North and South America, the Crimea, Japan, and quite recently a deep yellow-flowered species from Cuba. From Peru the Messrs. Veitch were fortunate in obtaining, through their late collector Mr. Pearce, the splendid *A. Leopoldi* and the no less distinct species *A. pardinum*. These two last-named species have been used to hybridise some of the finest species and varieties already in cultivation, and the one from which I believe the best results have been obtained is that brilliant-coloured dark-crimson variety *A. Ackermannii pulcherrima*. *A. Oheleonii* was exhibited on a previous occasion; it is as brilliant in colour as *Ackermannii pulcherrima*, but a great advance on it in the formation of the flowers; the segments are more rounded, and the flowers more broadly opened and symmetrical; the colour is orange crimson. Brilliant is another striking flower, with the scarlet shade predominating. *Maculata* was exhibited the same season (1872). To all the above first-class certificates were awarded. Again, the Messrs. Veitch exhibited a collection of no less than forty-two distinct varieties at the Royal Horticultural Society's meeting, February 16th, every one of them worth growing for decorative purposes, and the colours of the flowers were quite as remarkable as their high-class quality. Indeed it may be truly said that this group of Amaryllises contained some of the most strikingly novel flowers ever seen in England, or perhaps any other country. Five varieties were selected by the Committee for first-class certificates, and a large proportion of the others that had names attached were not inferior to those so honoured. The following notes I made of the flowers as they were exhibited, and the first five named were certificated.

A. Junius.—Flowers of excellent shape, 6 inches across, rich crimson scarlet, with deep crimson shade at the centre of the segments.

Sultan is a very distinct flower of handsome shape; the segments slightly recurve and give a very elegant appearance to it. Colour crimson, with distinct shade of claret.

Agatha.—Well-shaped flowers; the centre reddish
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crimson, the outer edge of the segments edged with creamy white.

Rev. J. Stainforth is the largest and best-shaped flower in the collection. It measures nearly 7 inches across. The segments are marbled and spotted with crimson; the centre is pale yellowish white, with lighter stripes down the centre of each petal.

Phæbe.—Dazzling scarlet, with a greenish yellow centre. A very striking flower.

Thomas Moore is well worthy of the name it bears. The flowers are of the largest size, in the way of *Junius*, but sufficiently distinct from it.

Medea.—Purplish crimson, with greenish centre.

Electra is of the pardinum type, and the best I have yet seen of this class; the crimson spotting on a pale yellow ground is very effective.

Kara.—A large reddish crimson flower, the segments beautifully rounded at the edge. The shape is very perfect.

Camilla.—This is a very pretty flower and the lightest-coloured one in the collection. The segments are creamy white, marked at the base with crimson.

To the above I would like to add a few remarks on culture. In the first place a suitable compost must be obtained. I have tried various composts, and have been most successful when good turfy medium loam was used, adding only some well-decayed stable manure and a little sand. A mistake is made if the pots are large; 6-inch pots are sufficient for the largest bulbs. The small bulbs are potted in 60's and small 48's. The best time to pot is when the bulbs are at rest. After carefully draining the pots place some very tough fibrous loam over the drainage, then fill the pot with the compost. The bulb should not be planted deeply; quite two-thirds of it should be above the surface, and the mould should be pressed in quite firmly. Our bulbs were potted this season a week or two before starting them. The bulbs had been in the pots in which they had flowered, and the pots were placed after growth was completed in a coolinery, so that they had at least three months of a resting period.

I prefer to start the bulbs in a temperature of 55°, increasing it if the flowers are required early to 65° at night after the flowers show. This year they were placed at once on a shelf in the Pine house, and they have done remarkably well. The succulent roots protruding as thick as goose quills and in great abundance above the surface mould in the pots, and the corresponding sturdy growth of the plants, show that they have the treatment they require. Some growers recommend that the pots be plunged in bottom heat at the time they are started into growth. I have tried this, and do not think that it is so satisfactory as placing the pots on shelves near the glass. We water sparingly at first, but when the fresh roots have reached the sides of the pots water is applied more freely. The atmosphere of the house is kept only moderately moist. The flowers sometimes show before the leaves, sometimes flowers and leaves come up at the same time, and not unfrequently the leaves make considerable progress before the flowers throw up. Like most bulbous plants the *Amaryllis* comes to its full development very rapidly. Two to four flowers are the usual number on the stalk, and when the first that opens is about fully developed the plant may be removed to the show house, where the flowers will continue in beauty for a week or ten days. Of course if they have been in a night temperature of 65° it will not be good management to expose them all at once to the free air of a greenhouse or conservatory; draughts of air would certainly injure the flowers. One end of the house should be kept closer for a few days after plants have been brought in from the forcing houses.

When the flowers have done blooming the plants are again placed in heat until the bulbs have completed their growth, and until that period they are watered freely; but when the leaves show signs that the bulbs are nearly ripe water is gradually withheld, the leaves fade, and no more water is given until it is time to start them into growth again. All through the growing period the plants are fully exposed to the sun.

I have made the above remarks on culture, having found the system to answer. But the *Amaryllis* is becoming almost universally cultivated, and other raisers of novelties besides the Messrs. Veitch are at work. Mr. Williams of Holloway has exhibited some fine flowers of a different type. A large number of very fine seedling forms have been exhibited from the gardens of Charles Kieser, Esq., of Broxbourne, and Messrs. E. G. Henderson & Sons have a large collection. No

doubt there are other cultivators who have had different experience, and any cultural notes would be very useful from them.—J. DOUGLAS.

ROSES ON THEIR OWN ROOTS.

I WAS rather surprised to see in one of the late numbers of the *Journal of Horticulture* that Mr. Camm altogether condemns Roses on their own roots. There are a few kinds that strike readily from cuttings taken with a heel even as late as October, and make good plants in a short time.

In October, 1875, I put in about a thousand cuttings of about twenty of the best varieties. They were taken with a heel and were well trodden-in in a trench made as if for planting Box, a little sharp road sand being first put at the bottom of the trench. The result was that Countess of Oxford, John Hopper, and Edward Morren almost all grew, and by the autumn made plants having beautiful roots as large as the plants on *Manetti* usually supplied by the trade. They were taken up in the autumn of 1874 and planted out in beds, and by last October had made capital plants, many of them having produced blooms fine enough for competition at any but the best shows. I put in more cuttings in October, 1874, with very much the same result as to the varieties which struck best. Some kinds—*Madame Vidot*, for instance—would not strike at all, but those which did strike grew for the most part as well as could be desired.

When John Hopper first came out I struck about a dozen cuttings of it taken from forced plants; they made fine plants in the course of two or three years, and are still in a prosperous condition, producing annually a fine crop of blooms. In short, I am much inclined to think that Roses on their own roots are not the mistake which Mr. Camm believes them to be. I have grown Roses by thousands for a good many years on the common Briar, the seedling Briar, and the *Manetti*; but I think that if I were about to establish a rosarium now I should go in for H.P.'s on their own roots. Teas do much better as a rule on the common Briar.—B. B. P.

LIBONIA FLOBIBUNDA CULTURE.

As a greenhouse plant there are few more worthy of cultivation than the above. Insert the cuttings in March, twelve in a 48-pot. They will strike freely in a compost of turfy loam and silver sand, the pots to be placed in a gentle hotbed. When rooted pot singly into 8-inch pots, using three parts turfy loam, one part old cow manure, one part silver sand, with some small pieces of charcoal. When established harden-off and grow in a cold frame, shift into 48-pots before the roots are matted together, and never let the soil become dry. In September move the plants into the greenhouse, affording them a light position and a temperature of 40° to 45°. The plants will flower freely from January until April, and will not disgrace the dining table or the drawing-room, the small bright green foliage with the orange and dark brown flowers being very effective. After flowering move them into a temperature from 55° to 60° to make new growth, harden-off, then move them outdoors.

Libonias make nice standard plants. Cut off all side shoots until 18 inches high, then stop as required to make a nice head 18 inches over, which they will do the first season with but little care. Place a plant in the centre of a fruit-stand with fruit round it. Place the stand in the centre of the dining table, and with a good plant of *Gesnera Bewleyi* on each side the effect is most beautiful, especially by gaslight. The *Libonia* will not flower in a high and moist atmosphere.—G. S., *Faulkners House Gardens*.

EXHIBITION OF CLEMATISES.—We are informed that Messrs. Jackman & Sons of Woking have made arrangements to hold an Exhibition of Clematises in the Royal Botanic Society's Garden, Regent's Park, similar to the gorgeous display which was made last year. The exhibition is to be opened on the 1st of May.

THE ARRANGEMENTS OF COLOURS

IN THE BEDS OF THE LONDON PARKS AND GARDENS.—No. 8.

THE designs submitted are distinct from those which have been previously figured. The effect of the beds when planted was very good, and the arrangement of the colours was gene-

rally admired. The designs are simple in outline, and the plants employed are of quick propagation and easy culture.

BED M.

1. *Chamœpence diacantha*.—White spiny-foliage plant of a very striking appearance, forming a fine contrast when grouped

with other plants, and for ornamental bedding it is unequalled by any plant in cultivation with similar foliage. Sow seeds in March in a gentle bottom heat, transplant the seedlings in pans as soon as they are large enough to handle, pot them as they get larger, keep them growing, and they will be fine plants to go out by the end of May.

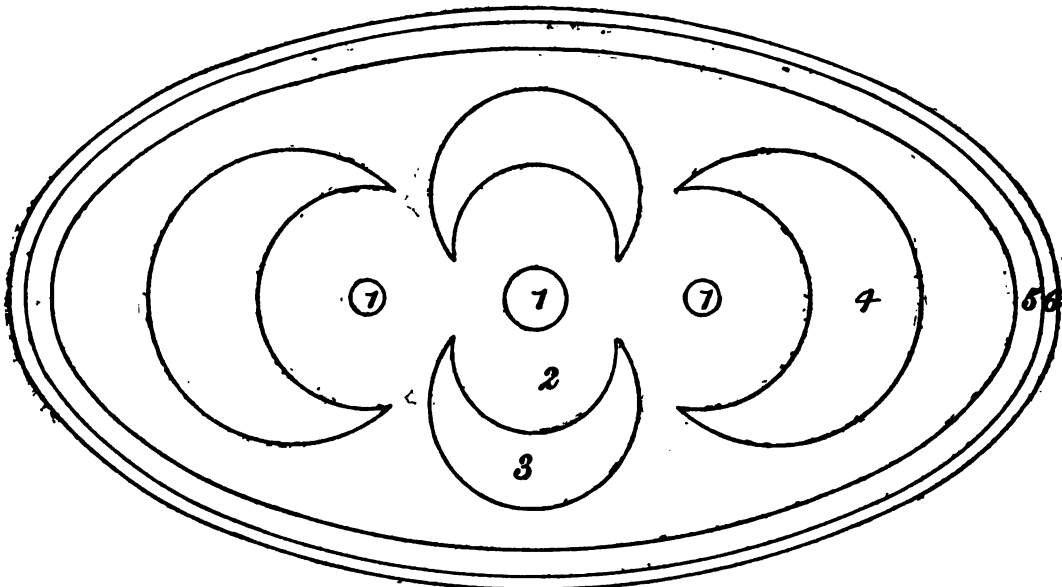


Fig. 41.—Bed M.

2. *Lobelia Blue King*, light blue.
3. *Alternanthera paronychioides major*.
4. *Alternanthera amosa spectabilis* (new), magenta red.
5. *Golden Pyrethrum*.
6. *Echeveria secunda glauca major*.—A distinct and very fine hybrid between *Echeveria secunda glauca* and *E. metallica*.

The leaves and the whole character of the plant resemble *E. secunda glauca*, but are larger than that species. The plants are stemless, and form semi-globular tufts. The plant is of free growth and strong constitution. It is a fine addition to the summer-bedding succulents. It is propagated by offsets, which are produced freely.

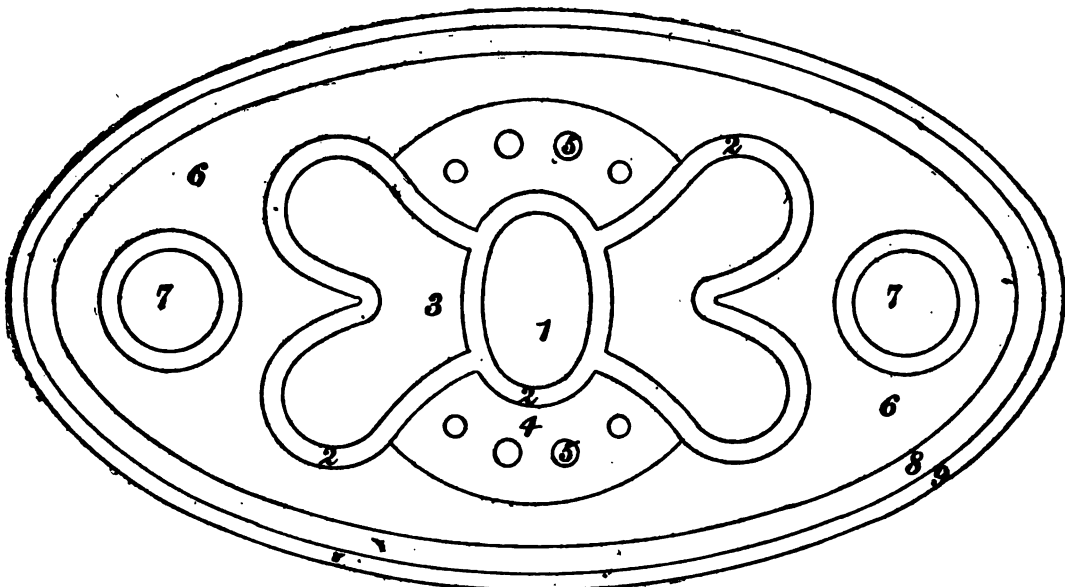


Fig. 42.—Bed N.

BED N.

1. *Fuchsia Golden Fleecce*.—The style of growth is dwarf and branching; leaf medium-sized, very glossy, and shining like gold; the flower-buds (including tube and sepals) are light crimson; the corolla blue. The plant grows freely, and the more it is exposed to light, air, and sunshine, the brighter is

the colour of the leaves. Cuttings struck in the spring make the best plants for beds.

2. *Achyrocline Saundersonii*, silver foliage.
3. *Lobelia Blue King*, sky blue colour.
4. *Golden Pyrethrum*.
5. *Echeveria secunda glauca*.

6. *Alternanthera magnifica*.
7. *Lobelia White Perfection*. One of the best of its class.
8. *Stellaria graminea aurea*.
9. *Cerastium tomentosum*.—N. COLA, Kensington.

USEFUL FRUITS.

DISCUSSION on useful hardy fruits is always valuable, but doubly so, it must be admitted, when conducted at a seasonable period of the year—that is, the period at which the trees may be planted. Yet information on the subject can never come amiss, for it costs nothing in storing, but, on the contrary, may acquire a greater value by keeping. Information, therefore, whether applicable to the ensuing spring or subsequent autumn, cannot fail to meet with general acceptance. At the present moment remarks on this subject are applicable to either season, for fruit trees may be safely and successfully planted now, or the work may be deferred until the autumn.

Autumn planting is advocated on the ground that the trees will emit fresh roots before winter. It is true they will do so if planted early, say in October or early in November; but if planted after the middle of November not one tree in a hundred will emit fresh roots until the following March. I have frequently taken up and replanted trees when the buds had commenced swelling, and they have flourished quite as well as others which had been planted one to two months earlier.

In late planting too much importance cannot be attached to keeping the roots moist (they must not be dry for a moment), and then the trees will re-establish themselves quickly. Drying of the roots of fruit trees should at all times be avoided; but in early-autumn and late-spring planting special care must be taken on this point, even if the syringe must be brought into requisition to counteract the drying effect of the atmosphere.

I will now refer to the two main questions propounded on page 129—namely, What form of tree is the most useful? and what kinds of Apples, Pears, and Plums are the most profitable? In approaching this question I not only seek to convey, but hope to elicit, information. I am willing to contribute my mite of experience, but I do so under a profound conviction that I have much to learn.

When I commenced fruit-growing (on the ordinary scale usually practised in gentlemen's gardens) about twenty years ago, I confess to having felt tolerably competent, and I fear I did not entertain the same respect for the opinions of others as I do now. I thought then that I had not much to learn, but I have found since that I have had a great deal to unlearn. Young men, do not hesitate to unlearn if the teachings imparted by others (or your own inborn notions) are unsound. A measure cannot be filled until it has been first emptied. Those of sanguine temperament, holding extreme views, have frequently much to unlearn at some time or other during their lifetime, and I have had twice to unlearn on the matter of fruit trees.

I was once firm in the conviction that to produce useful fruit in a profitable manner, that Apples and Pears on free stocks and not pruning the trees was the correct mode to adopt, but the plan exhausted my patience; and without attempting to adjudge it wrong, I cannot admit that if exclusively adopted it is right. It is a plan that should be adopted, but only in conjunction with other modes and with such modifications as to pruning which experience has proved to be advisable.

From that extreme I went to the other, and followed up the "dwarfing" system with all the ardency of a young convert. I would hear of nothing but "Paradise" stocks, "finger and thumb pinching," and "root-pruning." I thus raised trees—little prodigies—which the natives came to wonder at, admire, and feed my vanity. There they were and there they are—some of them, that have not "gone dead"—pomological dolls, stunted, overworked, crippled, little slaves living (or dying) "fast" lives of forced labour, and not "leaving a good name behind them."

Labour by the lash cannot be profitable without being cruel, whether applied to trees, beasts, or men; and as I hate cruelty I have sought for profitable returns of fruit by the rational system of guiding and tending, rather than by the greedy, harsh, practice of whipping and cutting. I have arrived at the conclusion that it is as reasonable to whip and drive a child into manhood—that is, to hasten the growth of bone, and sinew, and intellect by flogging—as it is to attack the sources of life of a young tree; to pinch it above and cut it below equi-

timally, and expect it, to the greatest extent of its nature, becoming profitable. Thus I do not on the one hand believe that a tree should be permitted to grow unpruned and untended, or, on the other, that it should be mutilated by a practice which is falsely termed art. I believe in doing justice to the tree, also to the intelligence of man. His prerogative is to "dress and to keep," but not to destroy.

But in considering the question of the best form and character of the tree by way of producing in the fullest manner "useful fruit," we cannot in practice dissociate from the subject the element of "time." Were the matter to be decided regardless of time, then indeed little discussion would be needed; for it is, and in all probability will be, the well-tended orchard trees which will meet a nation's demand for fruit, or at least those in connection with espaliers, for the latter have in the past proved valuable adjuncts to the former, and espaliers in the future are unquestionably capable of yielding a maximum supply of fruit under a minimum outlay of ground, space, and labour.

There is no lack of would-be authorities on fruit culture who dogmatize on the subject as if time were of no moment; but in point of fact and in actual practice it is of the very first importance. So important has the element of time been in the past, that it is to its influence more than anything else that useful hardy fruit trees have not been more generally planted.

It is not often that we find the question disputed that fruit trees are profitable, even fully as much or more as than ordinary garden and field crops. Most people admit that freely, yet they hesitate to plant on account of the years of waiting which they feel must be endured before their harvest can be reached. It is all very well to remind such of the benefits derived from the works of their ancestors, and to urge as a corollary the duty of the present generation to provide for the wants of posterity. That is all very reasonable; but as a matter of fact those who invest like to do so in a manner of which they can have a reasonable probability of seeing and enjoying the fruits of their enterprise. They have as great right to do this in fruit culture as in any other mode of investment. It is easy to denounce with dogmatic assurance the system of growing fruit by an artificial mode of culture, and employing precocious stocks, but it is only by such stocks and such culture that many, who desire to have fruit in their gardens, can hope to live to see it there produced.

If I had a garden containing no fruit trees I should (although I am not in the "sere and yellow leaf") most assuredly plant Apples on Paradise and Pears on Quince stocks, not because of the innate superiority of those stocks as being, half a century hence, the most profitable, but simply on the question of time. Time, I urge, is of paramount moment and must be considered in the question of fruit culture. We can no more ignore the advantages of railways or successfully endeavour to prove the superiority of animal locomotion than we can set aside stocks of a quick fruit-producing nature, or successfully adjudge them inferior to the slower-bearing trees. Comparisons indeed between the two modes of locomotion and two plans of fruit-production cannot be reasonably instituted by way of proving the superiority of either. They are not antagonistic, but each is allied to the other naturally and profitably. We must adopt both modes; and if we make the best of them our reward will be greater than by pinning our faith and concentrating our energies on one system alone.

Both plans of fruit-production are good—dwarf and standard—if they are used and not abused. The dwarfing system has been abused by whipping infantile trees into bearing with as much reason as yoking a two-year-old colt to the plough and flogging him on in the killing work. Orchard trees also have been abused—the abuse of starvation—by sticking them in "under the sod," and leaving them to struggle on with little support and attentive care. Neither of those plans are the most useful or profitable; but if the trees of both descriptions are rationally treated they will yield such returns as will prove their value, and will silence in the most complete manner those who in the full pride of a pet dogma produce little beyond the usual crop of wild notions. I will, with permission, refer to this subject on a future occasion.—AMATEUR ORCHARDIST.

ROSES FROM CUTTINGS.

NOTWITHSTANDING Mr. Camm's undoubted renown as a rosarian, let me recommend "St. Edmund" to try growing Roses from cuttings. I assume he means to force them; and if so, Teas, with which I am best acquainted, will serve him well.

By this I mean that he will find cuttings of these root well, grow well, and bloom well in what I consider a moderate length of time from taking them from the parent plant.

I have some plants which are not any of them more than a year old, some not more than ten months, and they are from 15 to 24 inches high, with one, two, or three principal shoots, and from one of them I, this morning, cut a lovely bloom of Catherine Mermet. They will bloom more freely next year I admit, but they are pretty, healthy, and symmetrical plants now.

I think it right to add that I began cutting blooms on December 26th, 1874, and hardly missed a day until the outdoor plants came into flower. This year, in consequence of the wet season, the wood did not ripen, and they are nearly a month later.

"ST. EDMUND" may likewise be encouraged by the knowledge that I do not keep a qualified gardener, that I live in the middle of a manufacturing town with a factory chimney at the south-east corner of my garden, and that the only space I have for forcing is that under some Vines in an 8-foot section of a lean-to house 14 feet wide.

On an old plant of Souvenir d'un Ami on its own roots I counted twenty-five flowers in different stages of growth, all showing colour about a fortnight ago. So much for the dictum that these plants do not bloom freely.—E. L. W., Yeovil.

ROYAL HORTICULTURAL SOCIETY.

MARCH 1ST.

FRUIT COMMITTEE.—Henry Webb, Esq., in the chair. A brace of Cucumbers was received from Mr. Owen Thomas, gardener to Sir Robert Peel, Drayton Manor. The variety is the result of a cross between Telegraph and Masters' Prolific. It partakes more of the character of the latter than of the former, but was not considered sufficiently distinct. Mr. Thomas was awarded a letter of thanks. Mr. Thomas McLure, The Gardens, Hartley Grange, Winchfield, sent roots of Black Alsace, a long black Turnip, which is very hardy and very valuable for winter use. It was decided to have it cooked, and a report to be made upon it at the next meeting. Lady Holland sent a dish of Birmingham Stone Pippin Apples grown at Holland House, Kensington, which were in very fine condition, and a letter of thanks was awarded. A dish of very finely flavoured Old Colmar Pears came from the garden at Chiswick.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. It would not have been surprising, considering the miserable state of the weather—the persistent downpour of rain—if both horticulturists and plants had been absent from the Council-room on this the first meeting after the ratification of the "Treaty of Peace." But peace, usually bringing prosperity, fostered a willingness in several floral caterers to make an attractive exhibition, the mildness of the day further favouring the safe removal of tender plants.

A most beautiful group of Orchids, interspersed with a few choice Palms, was exhibited by Messrs. Veitch & Sons. The Orchids comprised about fifty plants of Dendrobies, Odontoglosses, Cypripediums, Phalenopsis, &c. Odontoglossum Pescatorei had a splendid spike with eight branchlets and a hundred flowers. Odontoglossum gloriosum had a remarkably dense spike of over fifty flowers. Near it was an unnamed "species," or variety, of great beauty, apparently intermediate between O. gloriosum and O. Alexandra. O. triumphans had a very fine spike 4 feet in length. Angreum citratum had a lovely spike of fifty pearly white flowers. Odontoglossum Roessli was in lovely form, and the Dendrobium crassinode, Wardianum, &c., were in good force and fine condition. Noticeable also was a small plant of Dendrobium Ainsworthii, a cross between D. heterocarpum and D. nobile, very distinct and chaste. Masdevallia nycteterna was also exhibited; it is a singular species, the flower being buff with purple maroon spots and horns; it was springing from the root and resting on a mound of moss. Ada aurantiaca and Dendrobium Jamesianum were also very attractive. The collection was highly commended by the Committee.

Mr. B. S. Williams also exhibited a very gay miscellaneous group of fine-foliated and flowering plants, consisting of Palms, Ferns, Orchids, Eucharises, Bertolonias, Amaryllises, Anthericum variegatum, &c. In this group Calanthe Turneri, Cypripedium Dayanum, and Zygopetalum crinitum were specially noticeable. Habrothamnus elegans argenteus was exhibited, the foliage being nearly white. The Bertolonias Van Houttei, superbissima, &c., were also attractive. Mr. Williams also exhibited a dozen plants of Primula sinensis fimbriata of a remarkably robust strain. Also as new plants, Odontoglossum membranaceum superbum; Masdevallia polysticta, a small species singularly spotted, and Amaryllis Mendelli of fine form and of a rich crimson scarlet colour, and a variety of undoubted merit. A vote of thanks was awarded for the collection.

Mr. Bull exhibited a double white Hyacinth, which is distinct and beautiful. The foliage is stout, short, closely set, and of the richest green; the flowers, which are perfectly double, being pure as driven snow. This is undoubtedly a plant of great value, and merited the first-class certificate which was awarded it. It was introduced from New South Wales, and was named onomiflora flore-plena, its foliage resembling that species, but is of a deeper green.

Mr. Bennett, gardener to M. T. Bass, Esq., M.P., Rangesmore Hall, sent a splendid plant of Phalenopsis Schilleriana, having foliage a foot in length and 5 inches in breadth, a spike 5 feet high with ten branchlets and nearly a hundred blooms. For this superior example of culture the Committee recommended to the notice of the Council that a Davis medal be awarded.

Mr. Herbst, nurseryman, &c., Richmond, exhibited about sixty pots of Lily of the Valley, densely bloomed and very fine; also good plants of Hostia japonica, and was deservedly awarded a vote of thanks.

Messrs. R. Rolleston & Sons, Tooting, exhibited a fine plant of Erica herbacea var., a species of Alsophila from the West Indies, a fine basket of the intense primrose-scented plant Ragonia megastigma, and half a dozen plants of Grevillea Preissii, a very graceful Australian plant, not unlike a fine species of Retinospora, with pendulous racemes of flowers freely produced of a soft red colour. This is a very distinct plant, and a first-class certificate was awarded. The plant at first sight somewhat resembles Southernwood or "Lad's Love," Artemisia Abrotanum, clothed with flowers.

Mr. Ollerhead, gardener to Sir H. Peek, Bart., Wimbledon House, had a vote of thanks for two admirably grown plants of Odontoglossum Alexandra, and he also exhibited a singular flower of the Flamingo Plant having two spathe. These were alluded to in our columns last week.

G. F. Wilson, Esq., F.R.S., sent an Hepatica of a "new colour." It was thought to be unusual by its very red petals, and was highly commended. Mr. Wilson also exhibited an American Goodyera. Some gigantic blooms of Cyclamen persicum were exhibited by Mr. Ware, gardener to — Morgan, Esq., Hungerford Park, Tunbridge Wells, but they were much withered.

A basket of hardy Primroses was exhibited by Mr. B. Dean, Ranelagh Road, Ealing, for which a vote of thanks was awarded. Mr. Chapman, gardener to Dr. Patterson, Northbridge Road, Fulham, exhibited a plant of Phlox maculatus, misnamed Oenothera Sieboldii; and Mr. Douglas, gardener to F. Whitburn, Esq., exhibited a fine head of Poinsettia having nine sub-crowns; it was very robust and good.

ERANTHEMUM PULCHELLUM.

Blue flowers are indeed scarce amongst stove flowering plants, hence are always acceptable, more especially those which flower during the winter months, and one of the most useful is this old, very free-flowering, easily-grown plant. I have plants now in 4-inch pots not more than from 4 to 6 inches in height, little less than all flower, and yet the plants have the healthiest foliage, and are very useful alike for cutting from and for decorative purposes.

I usually cut the old plants, the shoots of the previous year, to within one or two joints of their origin, keeping the plants rather dry for a fortnight after flowering. The plants start away freely and are potted when the young shoots are 2 or 3 inches in length. The balls are considerably reduced, and the plants are returned to the same size of pot, and are given a larger size when the plants have filled the pots with roots. A light airy position is afforded; and if this cannot be given in a house the plants do equally well in a cold pit, admitting air moderately so as to keep up a good temperature; and it is only right to say the plants do better than those grown at a distance from the glass in a warm house, the growth being stouter, shorter-jointed, and the flowering is proportionately finer. From the middle of June to the middle of September they are as well in a cold pit as in a stove.

If bushy plants are wanted the growths may be stopped when the shoots are grown so as to be stopped to two joints; or the plants may have the shoots regulated by tying to stakes as they advance. The unstopped flower earlier than the stopped plants. In April, or when the plants are cut down, cuttings may be taken of shoots with two joints and the growing point, and these inserted in sandy soil up to the second pair of leaves will root quickly in a gentle bottom heat. They should be potted-off singly when rooted, and kept in heat until established, and may be removed to a cold frame in June or July, shifting at that time into 5-inch or 6-inch pots. They will grow very stocky, and flower well in early winter in a cool stove or warm greenhouse, being removed thither by the middle of September.

Cuttings taken in June and inserted round the sides of a pot in sandy soil and placed in a hotbed will speedily be well rooted, and may then be potted-off singly into 4-inch pots, and placed in a cold frame kept close and shaded until the potting is recovered from, and then have moderate ventilation, and be kept duly watered, the object being to keep them dwarf by close proximity to the glass and at a temperature only promotive of slow growth. By the middle of September remove them to a light airy position in a cool stove or warm greenhouse, and in January or February will be a reward of massive heads of blue flowers.

Turfy loam with a third of leaf soil, or preferably a fourth of old cow dung, will grow them well. Weak liquid manure given at every alternate watering after the blooming pots are filled with roots will be found highly beneficial.—G. A.

NOTES AND GLEANINGS.

WE have received from A. D. Hussey Freke, Esq., of Hanington Hall, Highworth, a branch of BLACK THORN, on which a summer shoot has been produced of the extraordinary length of 4 feet 9 inches. It is very slender, and so like an Elm at first sight that we are not surprised Mr. Freke thought it a *lusus naturæ*. It is undoubtedly the shoot of a Plum, and is so unlike the growth of the Black Thorn or Sloe that the suspicion is it may be a bud sport. We have preserved it, and will have the shoot cut into scions and grafted, for the purpose of ascertaining whether or not it produces fruit of the Black Thorn or of some other form of Prunus.

THE thirty-third anniversary DINNER OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION will be held on the 80th of June at the Albion Tavern, Aldersgate Street. Dr. Hogg, one of the Vice-Presidents, will preside.

A "VISITOR" informs us that the NEW DRACÆNAS at the Anerley Park Nursery have been operated on by Mr. Bause, who has propagated the tops of the plants "without losing a leaf," and that the colours of many are greatly intensified now that they are no longer seedling but cutting plants. Some plants which did not at the first show colour have recently "broke" into varieties of great beauty. Mr. Wills, we are informed, has had tempting offers made for the collection, but it is not yet decided in what form the plants will be disposed of.

YUCCA FILAMENTOSA VARIEGATA is not only one of the finest of hardy, or nearly hardy, variegated plants, but its beauty is infinitely increased if the plants are grown in heat. The ivory whiteness of the foliage is then most pure, and the leaves in some degree lose their upright habit and recurve in the most elegant manner, rendering it one of the most effective of indoor decorative plants. At the Anerley Park Nursery are some very perfect specimens of this plant, and what is especially noteworthy is the manifest fact that the manager has found out a means of increasing it freely; the stock of this, as of other valuable plants, attesting that not only is Mr. Bause an eminent hybridiser, but is an equally accomplished propagator of plants.

WE have had forwarded to us by Messrs. James Carter and Co. a collection of blooms of carmine and white-fringed PRIMULAS, gathered from plants which are being grown for seed in their nurseries. These blooms are exceedingly fine, the whites being spotlessly pure, and the darks rich and deep. The individual pipe average 2 inches in diameter, and they are elegantly fringed; but the greatest merit possessed by these flowers is their unusual substance.

MR. WILLS of the Royal Exotic Nursery, Onalow Crescent, supplied the FLORAL DECORATIONS at the Royal Albert Hall and the Royal box at the state concert. Mr. Wills also supplied the bouquets presented to Her Majesty and the Princesses. Her Majesty's bouquet was composed of Roses, Eucharis, Odontoglossum Alexandræ, Cœlogyne cristata, Violets, and Lilies of the Valley. That of the Princess of Wales contained Neapolitan Violets, Dendrobium Wardianum, Lilies of the Valley, and various other flowers. The Princess Beatrice's bouquet comprised various Orchids, Lilies of the Valley, Roses, Eucharis, and Lilac, surrounded by Brussels-lace holders.

MESSRS. BACKHOUSE & SON state DAPHNE RUPESTRIS to be a real Alpine gem, surpassing the well-known D. cneorum (the Trailing Sweet-scented Daphne) both in beauty and fragrance. D. rupestris has erect shoots, and forms dense compact tufts or carpets 2 inches high, and a foot or more

across, covered with a mass of bloom which sometimes almost eclipses the plant. Its colour is a soft shaded pink or rose, and its flowers are individually larger and more waxy than those of D. cneorum, yet forming clustered heads in the same way. D. rupestris is essentially a rock plant, growing wild in fissures of limestone in peaty loam. It is perfectly hardy and of easy culture. Its scent is powerful yet very delicate.

LORD WINMARLEIGH has presented a petition to Parliament from landowners and others in the manufacturing districts, praying for the amendment of the laws relating to NOXIOUS VAPOURS. His lordship alluded to the disastrous effect of the increased discharge of noxious vapours in destroying vegetation, and stated that in some districts the woods in July presented the appearance of trees in midwinter, and land was being rendered gradually valueless. That is no overdrawn picture, as many districts unfortunately prove, and now that minerals are being sought for, and furnaces being erected in many rural districts, legislation on the point is greatly needed. Great injury has already been done to nurserymen and others, and redress is at present an expensive luxury. The Duke of Richmond admitted the existence of the evil, but was not at present prepared to submit a remedy.

THE New York Practical Farmer, in alluding to the approaching Philadelphia Centennial Exhibition, states that the preparations for the HORTICULTURAL EXHIBITION are well advanced. The grounds, containing more than 40 acres, are well laid out in irregular plots for the exhibition of trees, shrubs, bedding plants, &c., which will be furnished by the 150 exhibitors who have already applied for space. In the horticultural building there will be a magnificent display of tender plants collected from all parts of the world. All the native trees of this country will be represented, together with many of foreign origin, particularly the later importations from China and Japan. England, France, Germany, Brazil, Netherlands, Cuba, and Mexico have already applied for space, and so many applications have been made that additional room will be needed to accommodate some special displays. Arrangements have been made for putting up one more building, in which will be shown a very large collection of Rhododendrons from Waterer's of England, and, later in the season, for other displays of like character. Many plants have already arrived, and have been placed in the building; amongst these is a very fine collection of Australian Ferns from Miller and Sievers of San Francisco.

THE English Mechanic says that the well-known Dresden manufacturer, Herr F. Siemens, has recently patented a method of HARDENING, TEMPERING, AND PRESSING GLASS, which appears likely to become of more practical utility than the process of hardening discovered by M. de la Bastie. At the time when the latter's discovery was made public it was announced that Herr Siemens and others had been experimenting in a similar direction, and the accusation was freely made that Bastie's process was being pirated. Whether or not it is so in Germany, the process described by Herr Siemens in his English specification certainly keeps clear of the "claim" put forward by M. Royer de la Bastie, for he does not employ the method of hardening glass by plunging it when heated into a liquid bath at a lower temperature, but hardens the glass by placing it in moulds and pressing it at the same time. The method of Herr Siemens consists in heating and then suddenly cooling the glass to be hardened or tempered.

APPLICATION OF MANURE.

MANY years of experience and observation have satisfied me that the spreading of manure on the surface of the soil, and letting it remain there for some weeks or even months, is good practice, and especially in dealing with light soil. In such soil, if the manure is dug in deeply in the autumn, much of its virtue, I think, is washed into the subsoil before the roots of the summer crops can appropriate the food; in fact I think the food is in a great measure conveyed beyond the reach of such roots.

I have frequently tried the experiment on light soil of digging in a portion in the autumn and leaving another portion covered with manure throughout the winter, digging it in in the spring, and the last-named plan has invariably proved the best. I have not had an opportunity of experimenting on heavy soil. With light old garden soil I am so far convinced that Mr. Graves is right that, had I my manure to purchase and digging to pay for, I should spread the manure on the surface fully

six weeks before digging the ground, and should then choose fine weather for turning it in, planting the crops as soon as convenient after the ground was dug. I should then expect the roots to reach and appropriate the food, much of which, if it had been buried three months previously, would, I should fear, be beyond their reach.

I have arrived at this conclusion solely by the teachings of the crops. I know very little about "science." I would rather have good crops with bad science than good science with bad crops.—A PLAIN GARDENER.

EUPETALUM.

A FIGURE of this plant has been submitted for identification. It is claimed on the one hand to be an Eupetalum, and on the other a Begonia. It is no doubt a Begonia, and the same that is figured and described in vol. xxi. of the "Botanical Register." It is equally an Eupetalum, for Dr. Lindley considered it to be sufficiently distinct to be separated from the Begonias and to rank as a genus—hence he classed it as an Eupetalum. *Eupetalum punctatum*—the only species—and *Begonia petaloides* are synonymous, and either name may be applied to the plant.

It is a pretty stove plant, which was introduced from Mexico nearly forty years ago. It has rosy pink flowers which are freely produced, and the plant is worthy of cultivation. Very recently the culture of tuberous-rooted Begonias has been fully treated on in these columns, and the mode of culture there detailed is suitable for the plant which is now figured.

CAULIFLOWERS AND BROCCOLI.

No. 2.

VEGETABLES of the very first importance are these, and a simple mode of producing an "all-the-year-round" supply of them was described on page 123.

It was there stated as of the first importance to effect a junction of Cauliflowers with the Broccoli in January, and another union of the same nature in June. The cycle is then complete, provided that there is no interruption of the seasonal crops coming into use in regular order and at the right time.

I mentioned that the supply of these vegetables had been secured by relying on a comparatively few varieties, but I do not mean to suggest by that that only those varieties should be grown. By other sorts than those named the same end can be attained if the selection is carefully made and one is assured that the varieties are true to name. In raising a supply of Cauliflowers it is well not to change the sorts—or the seedsmen supplying them—which prove their usefulness and are ready when wanted. A gentleman will not often trouble himself or his gardener as to the mere name of a Cauliflower pro-

vided it is white, sweet, and good, and not too large; but to have twenty sorts in the garden and none on the table is an unpleasant matter to explain away. I like to grow a few other varieties than those which I depend upon, growing them as a supplementary or experimental crop, taking care to have sufficient of the plain useful sorts which I have proved reliable for a full supply. It should be noted, too, that if these sorts were ordered from another seedsman there is no certainty that they would come as expected. Cauliflowers and Broccoli are very sportive, and they have, furthermore, no fixed and standard nomenclature, but every grower has good stocks. The new varieties are grown and seeded with special care, and may generally be had true for a year or two, but it is surprising how soon their distinctness is lost by being jostled in the crowd; they lose a little here and a little there until they find their level and habitation in the bags of Willcove or Knight's Protecting.

Amongst the new sorts that I have grown I have found Veitch's Protecting Broccoli one of the best of the early section. Heads of this variety will form in the centre of the plant and there apparently remain stationary for weeks. I once went into a garden where the gardener was bewailing his lack of heads; he was, as he said, "in a mess," having no Broccoli. Yet when I assisted him to tear a few plants asunder we found a "hidden treasure." As a late sort *Lauder's Goshen* is an excellent variety, so also is *Carter's Summer Broccoli*. For midseason, or rather late sorts, *Sutton's Perfection* and *Cooling's Matchless* are undeniably good varieties; but I find that more depends on the good name of the vendor than on the names of the seeds.

Broccoli should be grown thinly on hard and rather poor soil, and in a very exposed place. It depends on culture rather than by any inherent virtue of a given kind whether it is "hardy" or not. The plants may be grown hardy or grown

tender according to the treatment they receive. I take but very little notice as to what a seedsman says about this or that sort being "hardy," knowing that the hardihood of the plant does not depend on him, but on my mode of culture. Men fail and blame the seedsmen, but in nine cases out of ten the grower is really at fault by having ordered either a wrong sort or grown it in the wrong way. I sow *Snow's Winter White* and sorts of that class in March, the general crop in April, and the latest sorts as late as June, and by the best selection of sites I can choose I have heads of Broccoli as long as it is possible to have them.

It is more difficult to provide a regular summer and autumn supply of Cauliflowers than a winter and spring supply of Broccoli. A blank must always occur early in July unless a little seed is sown under glass at the present time, and the plants are prepared in warm sheltered positions. It is only



Fig. 43.—EUPETALUM—BEGONIA PETALOIDES.

by this means that the first spring-sown crop can follow immediately on the heels of the crop raised from seed sown in the autumn. I have often found the advantage of planting a portion of the autumn-sown plants on a north border, and so retarding them and obtaining a natural succession from two plantations from the same sowing. I have frequently found that practice to be very valuable, and in fact only by it should I have prevented the blank which is so common—the blank occurring between the maturing of the last autumn and first spring-sown crop which occurs in July. By retarding some plants now and sowing also some seed under glass the blank may be averted, and I am not conscious that it can be prevented by any other means.

The heat of summer is a natural impediment to Cauliflower production. I have occasionally surmounted the difficulty by adopting the trench mode of culture, not only growing the plants, but sowing also the seed in trenches. I had observed that notwithstanding all I could do in watering and surface-mulching that the plants would button and shrivel away—I mean those which had been transplanted—while those remaining crowded in the seed bed and receiving no attention would preserve their freshness as if in mockery of my cultural efforts. Turning the fact to account I have formed trenches similarly prepared as trenches for Celery, and in these have sown the seed very thinly, subsequently thinning out the plants, but not to distances of 2 feet to produce heads a foot across, but thinning only to 9 inches to a foot apart, and obtaining small heads 3 inches in diameter. Those are the heads coveted on a gentleman's table, four of which can be served in a vegetable dish. Huge Cauliflowers I hold to be a huge mistake, involving a waste of space and manure—that is, when they are required for the tables of the educated and refined. I have never failed in the hottest summers to produce sweet serviceable heads by sowing thinly and growing thickly in highly manured trenches, while I have failed completely by the usual mode of transplanting.

For the first sowing I employ Dwarf Mammoth, and for successional sowings I find no sort superior to Walseheren, taking care to have a large supplementary breadth of Veitch's Autumn Giant sown at the same time, and transplanted and grown in the same manner as the general crop of Broccolis, only planting in richer soil. This sort never fails by drought. Thus do I produce a full supply of Cauliflowers and Broccoli "all the year round."—R. FISH'S PUPIL.

CHRYSANTHEMUMS AND THEIR CULTURE— "EXTENUATING CIRCUMSTANCES."

No. 2.

In essaying the culture of Chrysanthemums it is first of all necessary to consider the special requirements of a place or owner. If large blooms are the primary object and the form of the plants of secondary moment, then plants on single stems receiving but little stopping must be grown. These plants for intermixing with the green foliage of Camellias in large conservatories are very effective. Although the blooms are few they are fine, and with care are long-lasting—more so, indeed, than are smaller and more closely crowded flowers.

In order to have very superior blooms the plants should now be established in small pots and be growing sturdily in cool frames; yet fine flowers may be produced from cuttings inserted now, which is the ordinary time of commencing preparations for the supply of these fine autumnal plants.

But any sort of cuttings will not do. An experienced grower knows at a glance which cutting to select. A short-jointed vigorous sucker springing direct from the soil will, with good culture, retain its specially robust habit throughout the season. Weakly cuttings, and especially shoots springing from the stems of the plants, cannot by any course of culture be expected to equal cuttings which come clear from the soil and are stout and strong from the first unfolding of their foliage. After choosing the best cuttings they should be rooted in a cool temperature, having all the light they can possibly endure. Rather than be shaded densely, to prevent flagging they should be sprinkled—dewed frequently, and by no means must they be drawn-up in heat. The cuttings are best potted singly, and a gentle bottom heat of 60° and top heat of 50° will be suitable to a cutting of medium texture. If potted in the autumn they require no bottom heat at all, but if the striking is deferred until spring, and the growth is succulent, the cuttings will damp-off unless afforded brisk heat; they

must, therefore, be treated according to their condition and other circumstances affecting their treatment.

The plants must be shifted as required, and each time before the pots are matted with roots. That is a very important matter, and equally, if not more so, is keeping the soil regularly and continually moist. If the plants in their early, or, indeed, in any stage, are permitted to receive a check by a neglect of potting or watering, no after-attention can atone for the injury which will inevitably follow, however skilful and unremitting such attention may be. To prevent injury by drought the pots should be partially plunged in ashes during the summer, and as near as possible to the water tank. In hot weather the ground amongst the plants should be kept constantly moist, and the plants should be frequently syringed, for if an arid atmosphere is permitted to surround them the foliage, by extreme transpiration, will become exhausted and will shrivel and fall. Syringing the plants occasionally with clear soot water is of great advantage both in fostering their healthy growth and as a preventive of aphid and mildew. Chrysanthemums, as a rule, in the majority of gardens, receive injury by an irregular and insufficient supply of water to roots and foliage during the sultry days of summer. They cannot always have an autumn temperature, but they may be provided with an autumn moisture-laden atmosphere, which is what the plants delight in.

If fine blooms are the primary object, the autumn-struck plants may be topped once, but spring-struck plants should not be stopped at all. But if, on the other hand, shapely plants are required, stopping may be practised as often as is necessary with the large-flowering varieties up to the middle of June, and with the Pompons until July. They may be trained to any form required, and must not be broken by the wind. A site that is sheltered but not shaded should be selected for their summer growth.

When the plants are well established in their blooming pots they must have liquid manure twice a-week until the blooms show their colours (these to be fine must be thinned, leaving the best bud on each point). Soot and cow-dung water is good, varied with guano water at half an ounce per gallon strength, and now and then a pinch of superphosphate of lime sprinkled over the soil and washed in will be beneficial.

The soil should consist of one-half of free loam, one-third of well-decayed manure, and one-third of leaf mould in the early stages of growth; but the final potting material should be of richer loam, substituting manure for leaf mould, using sand in both cases as needed. An admixture of crushed bones or oyster shells is highly beneficial to the plants. Still let it be remembered that those who have many duties to perform ought not to be expected to produce blooms equal to those who make Chrysanthemum culture a speciality, and who devote their whole energies in perfecting their work. Provided a man is able and does his best he is justly entitled to be judged by his whole work and not by a section of it; in a word, it is to him that should be applied "extenuating circumstances."

My visit to London has sharpened me up and taken a little conceit out of me; it has impelled me, however, to greater perseverance, and constrained me to aid others of my calling whose travels are circumscribed by garden walls.—A COUNTRY GARDENER.

DWARFED FRUIT TREES.

MR. SHIRLEY HIBBERD'S paper on fruit-culture read before the Society of Arts will evoke a good deal of adverse criticism, and as I think, very deservedly, for his condemnation of dwarfed trees is too wholesale to be trustworthy. What he should have condemned is the misuse of dwarfing, not its use. I have had sixteen years' experience in growing fruit trees in small gardens situated on the borders of one of our largest and smokiest manufacturing towns. When I commenced fruit-growing I had little or no experience; I had read Mr. Rivers's excellent treatise on "Miniature Fruit Trees," and most of Mr. Errington's articles on fruit-growing which appeared in the *Cottage Gardener*. From my subsequent experience I am, I feel certain, justified in saying that the advice given by both these authorities is perfectly sound, and may be followed (if followed properly) with a positive certainty of success.

I began with a few Apples, Pears, and Plums. With Pears I succeeded from the very first; with Apples I failed at first, but have since succeeded thoroughly; with Plums I have been less successful, but last year my trees bore well, and they are

now fuller of promise than I have yet seen them, and if the season should prove favourable I believe I shall have most satisfactory results to report later on.

The trees I purchased first of all came from a small local nursery. They were badly-grown pyramids; they had apparently been transplanted only once or twice, although they were several years old (I paid 6s. a-piece for them), and consequently bore evidence of being in a state of vigorous growth at the time I bought them. My garden was very poor, and the shock to the Apple trees did them harm as I believe; the Pears, however, seemed benefited by the change, as in two years they began to bear and have gone on increasing in fruitfulness year by year.

My practice from the first was to summer-prune with finger and thumb all the side shoots, but not the leader or the end shoot of the branches. These were stopped in August, and in October or November they were also considerably shortened. In the autumn of the second year I lifted the whole of the trees and replanted them carefully, giving to each some fresh soil. I shortened some of the long straggling roots with a sharp knife, but very little root-pruning was necessary, as the bulk of the roots were nice fibres close at home. The growth the following year was not excessive, and the wood produced was well ripened; while the fruit buds increased in number and a fair crop of fruit was borne, more Pears, however, than Apples, and very few Plums. In the fourth year I removed to another house, and as my tenancy expired in September I was compelled to lift my trees a little too soon (viz., about September 26th), but they were done carefully, promptly replanted in better soil and well mulched. Only one of them suffered; that gave no signs of bearing leaves the following spring, so I wound haybands round the stem, and frequently syringed the head and stem with clean water. It bore no leaves at all the year after removal, but from its appearance I was satisfied it was not dead, and the syringing was continued at intervals till autumn. The following spring it rewarded my exertions by bursting into leaf, apparently none the worse for its leaflessness for the whole of a year. At my new garden, in addition to the trees I have referred to, I planted thirteen more Pears, purchased from Mr. W. Paul, Waltham Cross. These were nice well-trained pyramids when they came into my hands, and as I had gained some experience by my four years' practice I have been enabled to retain them in better form than my first lot. They soon came into bearing; they are now fine handsome trees, studded with blossom buds from top to bottom, and yearly produce me crops of handsome fruit.

My practice has been to lift the trees every two or three years according to the vigour of growth in the preceding summer. Whenever so vigorous as to necessitate the free use of the knife I have lifted them, and always with the result of contracting the growth and causing it to be short-jointed and well ripened, and also always with the result of encouraging the development of fruit spurs. The roots I but rarely cut, except when I find long stragglers. I have also regularly followed the plan of summer-pinching. My trees are all in perfect health, are handsome, and fruitful to such an extent that although my garden is a small one (such as is usual in the neighbourhood of large towns where the freehold is worth £1000 per acre), I have plenty of fruit for the use of my family of eight persons and have some left to give away to my friends. Let me mention that on Sunday last (Feb. 20th) I was able to place on my table seven kinds of Apples and two kinds of Pears all home-grown. My stock of home-grown fruit will last for more than a month to come. As the result of my own experience I can strongly recommend amateurs to disregard Mr. Hibberd's strictures on the system of dwarfing trees, and would recommend a more general adoption of the system properly carried out.—PHILANTHES.

P.S.—I ought, perhaps, to state that I have now in my garden over sixty pyramids, though some of them have been planted only two or three years.

MANAGEMENT OF PLANTS IN WINTER.

WINTER is generally said to be a time of rest for plants, and no doubt in a general way it is true; but do we always go about the right plan to give plants in pots in houses their rest? and are there not many plants which would be better if they were always kept in a growing state? We may in a rough way divide plants into deciduous (those which naturally cast their leaves), and those which retain their foliage, as ever-

green shrubs and most half-hardy perennials. Nearly all the denizens of our stoves retain their leaves, and are better for doing so. The question therefore arises, Whether it is wise to keep the roots of the plants so dry as is the custom in so many places, while the temperature of the house even at nights is maintained at from 55° to 60°, and in many cases higher?

All deciduous hardy plants in their natural state have their roots more moist in winter time when in a state of rest than at any other time, and I do not believe that the circulation of sap is ever perfectly checked except in the severest weather. If fruit trees are pruned early, and the shoots left on the ground under the trees, there will soon be a marked difference between the plumpness of the buds and bark of those left on the trees and those that are cut off. No doubt some evaporation may take place through the cut, but the greatest part would take place through the bark. Now, in nature the buds and bark of deciduous hardy trees, such as Apples and Pears, Plums, &c., must be kept plump by the action of the circulation of sap. There is not warmth enough or light enough perhaps to cause growth, but there must be a certain supply of sap to compensate evaporation. In fact, if we watch the buds of some of our earlier shrubs, such as Lilacs and Ribes and some of the Honeysuckles, we shall find that there is a constant, though it may be a slow change, taking place in the terminal buds all through the winter. Just as moisture, and heat, and light are the three requisites for the germination and growth of seed, so it is true with regard to all growth, unless we except some of the lower types of fungus, which can grow without light, or plants unnaturally forced in heat, like Rhubarb, Seakale, &c. So long as the roots of deciduous plants are kept moist there will always be a sufficiency of heat and light even in winter to maintain a certain amount of circulation.

I cannot think we act wisely, then, in stoves, where more heat is kept up, to keep the soil in pots dust-dry. Of course many persons will say, Plants must have their rest, and we produce artificial rest by withholding water. I do not want to dogmatise or to lay down any definite rules, because there are such diversities of plants grown in our stoves that they must necessarily require different treatment, but I cannot help thinking that this system of resting plants is overdone. For instance, I have had *Allamanda Hendersonii* constantly growing, blooming from May to December, and the young growth for next year forming before the blooms were off. *Stephanotis floribunda* again, and many other plants, may be constantly kept growing.

No doubt large plants that are overpotted will not require so much water as plants in smaller pots. Still more, too, depends upon the night temperature. If the temperature is low (and it is very wise as a rule during winter to keep the night temperature as low as plants will bear), then less water will be required. Many ornamental-foliaged plants however, as *Crotons* and *Dracenas*, are permanently injured and the foliage lost by not giving moisture enough.

What few deciduous plants there are in stoves may be kept much drier, and, of course, all bulbs that are accustomed to lose all their foliage; but a mistake is often made with many greenhouse bulbs, such as *Agapanthus*, *Vallota purpurea*, *Liliums*, &c., of withholding all moisture during winter. Then, again, to turn from stove plants to greenhouse and bedding plants, here my experience every year more and more confirms my first impressions. If you want to keep healthy *Verbenas* or *Ageratums*, *Calceolarias* or *Geraniums*, you must keep them growing. Of course they do not all require the same degree of heat or moisture. *Calceolarias*, for instance, so long as they have moisture enough require but little heat, but nothing is so fatal as to keep *Calceolarias* dust-dry at the root. I remember seeing an inexperienced gardener at a country parsonage very much astonished, when he told me his *Calceolarias* would damp-off however dry he kept them, at my calling for a tub of water and putting all his plants overhead in it. *Verbenas*, again, as a rule are kept far too dry, and *Ageratums* too cold. And that much-enduring plant, our old friend the zonal *Geranium*, what a variety of treatment and suffering he has to go through—either with roots dust-dry in small pots on dusty shelves near the roof, or delegated to cold frames with all the leaves picked off, and nothing larger than a shilling allowed to remain on the plant. Sometimes, no doubt, the cold-frame treatment may be a case of necessity; but how often I am told they must not be kept growing during the winter for fear of the growth being premature, or of their

beginning to flower too soon, or of their being made too tender. And then with regard to the poor unfortunates with dry roots and flagging leaves on shelves; they are not watered because I am told bedding plants do not want water in winter, it would unduly excite them.

I have now for several years carefully tested the fact whether plants kept growing all the winter and put out in May in full bloom, last any less time in bloom than those which have their growth and then their blooms to make. I have kept Geraniums in bloom on shelves in a stove all winter, and found they bloomed just as freely in the summer; and certainly I have always found the beds of Geraniums which were in fullest bloom when I put them out first filled the beds with growth and bloomed best afterwards, and will last in bloom quite as long as those that come into bloom later. In fact, at taking-up time, except that the plants may be bigger, there will be no difference as to the number of blooms. Of course, a zonal Pelargonium is an exceptionally free-blooming plant, and (so long as it grows well), provided it does not overgrow, it will continue to bloom.

It is not equally true of Lobelias or Verbenas that if put out in full bloom they will continue to bloom the whole season. Still it is equally true that they do not require much rest in winter. Verbenas should be kept growing, but the growths should be pinched back so as to make the plants bushy. Lobelias, again, want the flowering shoots pinching out; but the great advantage of a tolerably warm treatment of these plants during the winter is that it enables persons in spring to make much larger and better plants. I know I shall be told it is not everybody who has the means to give bedding plants this treatment, and that they are not worth the trouble, and so on. Better go back to good old perennials and mixed border plants that gave one no trouble except tying-up, or dividing the roots, or digging over the beds, &c. Well, if bedding-out is worth doing it is worth doing well, and I am very sure that the good taste of the public will not long stand the geometrical arrangement of mere ornamental foliage in flat formal patterns and beds.

If a garden can be made gay from June to November with a proper selection of flowering plants, and if care is taken by means of Alpine plants, and bulbs, and other spring flowers to make the garden bright in the spring months by hardier plants, I am confident that the best strain of bedding plants will still retain their ascendancy, and that the proper winter management of them will still be of great importance. I know in many cases they are kept cold and neglected on the makeshift principle, when vineries might be utilised without any detriment to the Vines. And are not, again, gardeners placed too much under the dominion of their Vines? Why should it be thought the one thing requisite in gardening to be able to produce a bunch of Grapes at table all the year round? And are they worth all the trouble and expense they give? I know it is a bold thing to say anything against Grapes and Vines, but I am free to confess that I often think they are the worst things a lover of flowers has to contend with. You may in happy England see miles upon miles of houses given up to nothing but Vines. "Sacred to the Roots" is written on the borders; "Sacred to the Leaves, and Stems, and Fruit" is scored up in the house. And if one ventures to suggest that the houses might be utilised for plants as well—"Oh, no!" one is assured; "the two things are quite incompatible." Partridge is a good thing, but one even tires of *toujours perdrix*; and I should myself get heartily tired if I always saw a bunch of Grapes at table. I am afraid, however, this is a digression which will call down the righteous wrath of many a Vine-grower. In speaking of the winter management of plants in houses I wish I could see a little more use made of vineries, and that there was not such a tendency to give artificial rest by means often injurious to the plants.

These remarks are, I fear, somewhat discursive and hastily written, but they will answer their object if I induce some of your correspondents to still further ventilate the subject and give us the benefit of their experience. What I maintain is, that many stove plants are kept needlessly dry at the roots with too high a night temperature; that many of our greenhouse plants are kept, on the other hand, too cold; while our bedding plants are crippled and suffer during all the summer, or at all events till they have their roots and fresh growth established, because they were starved and neglected during winter. The object seems to me more just to try and keep life going, not to keep it vigorous and healthy; and I feel sure with our present improvements in our means of heating, light, and ventilation,

there is no reason why plants should be an eyesore during winter rather than a pleasure.—O. P. PRACH.

EARLY WRITERS ON ENGLISH GARDENING.

No. 10.

REV. SAMUEL GILBERT.

EARLY in the seventeenth century the gentry of England began to write on its gardening. Dr. Beale, Evelyn, and Sir William Temple are instances, and the gentleman I am about noticing was one of the number. Of the birth and parentage of Samuel Gilbert I have not been able to discover any particulars. That he was Rector of Quatt in Shropshire, and Chaplain to Lady Jane Gerard, Baroness Bromley, is stated on the title-page of his little volume entitled "Fons Sanitatis, or the Healing Spring at Willowbridge in Staffordshire." This



Fig. 44.—Rev. Samuel Gilbert.

was published in 1676. It was printed for the author, which sustains the statement in Harwood's edition of Edgewick's "Antiquities of Staffordshire," that Gilbert was a physician, and the book might be intended to increase the number of his patients. The clerical and medical professions were then and until the end of the last century very frequently and usefully combined. If they had not been so combined villages distant from a town must have been almost excluded from a doctor's assistance. He glances at this in his "Fons Sanitatis." At the end of each list of cases cured by the Willowbridge water verses are inserted in which he especially warns against those unskilled practitioners

"That speak most honey-healing words to please you,
Who of your money not your pain will ease you."

His verses are distributed through all his works, and those in Rea's "Flora" seem to be from his pen, but are only one evidence among many that he was entitled to the designation engraved beneath his portrait—"Philomusus," a Lover of Learning.

He dates his "Florist's Vade-Mecum" "at his house in Kinlet parish, near Bewdley in Worcestershire." This was in 1688, and his father-in-law John Rea had been residing with him; for Rea dated his "Flora, Ceres, and Pomona" in precisely the same terms in 1676, adding, "It is a rural desert where it was my unhappiness to plant my stock."

Mr. Rea died in the November of 1681, and his will states that he lived in a tenement at Kinlet, rented from one Oldnall. Rea devised this to his daughter Minerva, wife of Samuel Gilbert, with remainder to her issue, who Rea describes as his grandchildren. There was one grandson, Arden Gilbert, and four or five grand-daughters, and among these he left the profits arising from lands he leased from John Woolricke, Esq. To his friend Thomas Bray of Worcester he devised such of

his plants and flowers in pots as might be approved by the above-named Minerva, but to leave sufficient of each kind to keep up the stock. To Thomas Tassell of Wyche he bequeathed his Tulips. Of these Mr. Gilbert observes, "Mr. Rea had the largest collection of any man in England, some of which I lost by being beyond sea at his death."

Rea planned the gardens of Gerards Bromley, the seat of Lord Bromley, a title now extinct, and in the dedication to the young lord of his "Flora, Ceres, and Pomona" he says, "A little time may possibly produce such a garden as Gerards Bromley, when you shall be pleased to accomplish what was there begun by your noble father."

The publication entitling Mr. Gilbert to a notice in these pages is "The Florist's Vade-Mecum." This was published in 1683, and other editions unaltered, though said to be "enlarged," in 1693 and 1702. Bound with it, and mentioned on the title page, is "The Gardeners' Almanack for five years, 1683-1687. With monthly directions what ought to be done in either kitchen or flower garden for ever." The monthly calendars have specified the signs of the zodiac influencing the days, because at that time gardeners were guided by such directions as this which he announces: "If you prune your Vines the moon in full, and posited in Taurus, Leo, Scorpio, or Sagittary, neither worms nor birds will infest your Grapes." Yet it is a good directory in floriculture. Appended to it is a "Treatise of Auriculas," of which he and others were great patrons, as is told in this paragraph of its introduction: "Peter Egerton of Boughton near Chester, Esquire: I cannot but let every lover of flowers know his remov'd abode, to his estate at the Hall of Shaw, near Manchester in Lancashire, where he will keep up (and increase as new faces appear) his choice collection of plants and flowers. The last April I waited on him, before he removed from Boughton, and there found many Auriculas, that were not mention'd in this Compendium, and also three or four that I afterwards saw in the Pallase Garden at Worcester, belonging to Mr. Thomas Newton, gentleman to my very good lord, the Right Reverend Father in God, James Lord Bishop of Worcester. So that from Mr. Egerton's collection, who was the best florist in Cheshire, and hath the same pre-eminence in Lancashire, and Mr. Newton, who may challenge the same for skill in Worcestershire, and myself in Shropshire, and consequently from the choicest collections in these nations, I desire you accept the ensuing catalogue of the best single striped, double, and double striped Auricula's."

Of the date of Mr. Gilbert's death I have no information. There are no records of his will. Letters of administration were granted to the estate of a Samuel Gilbert in March, 1692, but I have no evidence that he was the author of "The Florist's Vade-Mecum."

ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 24TH.

THE adjourned Annual Meeting of the Fellows of the Royal Horticultural Society was held in the Council Room, South Kensington, last Thursday, under the presidency in the first instance of Lord Alfred Churchill, and subsequently of Lord Aberdare, President of the Society. The object of the meeting was to reconsider the privileges of the Fellows for the year 1876, a committee consisting of Mr. Hardcastle, Mr. Wilson, Mr. Freake, Dr. Pinches, Mr. Grote, and the Hon. R. W. Oshetwynd, having been appointed at the meeting of the 10th inst. to confer with the Council with respect to this question. The result of the conference between the Council and the Committee was the compilation of an "Amended Summary of the Privileges of Fellows for the year 1876." The Summary, copies of which were circulated in the room, was as follows:—

"**AMENDED SUMMARY OF THE PRIVILEGES OF FELLOWS FOR THE YEAR 1876.** Admission fee, two guineas. A. *Two-Guinea Fellowship.*—Each two-guinea Fellow is entitled to one non-transferable ticket, giving admission to its owner on all occasions, with liberty to introduce personally two friends, except to fêtes, conversations, and flower shows, and on reserved occasions. B. *Four-Guinea Fellowship.*—Each four-guinea Fellow is entitled to two transferable tickets, admitting the bearer on all occasions, with liberty to introduce personally four friends, except to fêtes, conversations, and flower shows, and on reserved occasions. C. *Six-Guinea Family Ticket.*—Two-guineas and four-guineas Fellows, by raising their subscriptions to six guineas, will be entitled to receive, in addition to the privileges of four-guinea Fellows, one extra transferable ticket, giving admission to the bearer on all occasions; and, except to fêtes, conversations, flower shows, and reserved occasions, to the whole of the owner's family resident in his house, including necessary attendants not exceeding two. On promenade days nurses will not be ad-

mitted, and children under twelve years of age must be accompanied by their parents or grown-up member of the family. D. *Twenty-Guinea Life Fellows* to have the same privileges as two-guinea Fellows; and *Forty-Guinea Life Fellows* to have the same privileges as four-guinea Fellows. E. *Twenty-Guinea Life Fellows*, by paying two guineas annually, may obtain the privileges of four-guinea Fellows. F. The privileges of holders of ten-guinea tickets remain unaltered. G. To all classes of Fellows the following privileges: 1. To purchase for members of his or her own household, at the price of £1 1s. each, non-transferable tickets, which entitle the nominee to all the privileges of personal admission that Fellows themselves possess, except that of admission on specially reserved occasions. 2. To purchase, for £1 1s. each, books containing twenty-one orders of admission to the promenades (for admission to which no money shall be taken at the gates). 3. To purchase, for £1 1s. each, books containing forty-two orders of admission on all days, except shows, fêtes, conversations, promenades, and specially reserved occasions. 4. To admit, by personal introduction, friends to the Gardens at South Kensington on Sundays. 5. To admit friends daily (Sundays excepted) by written order to the Gardens at Chiswick. 6. To purchase, previous to the day of each show, tickets at reduced prices. 7. To obtain, upon application, such seeds, plants, and cuttings as the Society may have in sufficient numbers to meet the Fellows' applications. 8. To purchase the flowers, fruit, &c., grown at Chiswick, which may not be required by the Council for scientific purposes. 9. To receive, on application in writing, a copy of the publications of the Society. 10. To vote at all meetings of the Society. 11. To give notice in writing of being relieved from the yearly payments while resident abroad. 12. To free admission to the reading room and Lindley Library. Non-transferable tickets at 10s. 6d. per annum, admitting to all shows, scientific meetings, and lectures of the Society (but not to promenades nor on reserved occasions), and to the Chiswick Gardens on week days, will be issued to *bond fide* gardeners recommended by two Fellows. All former Fellows of the Society who have withdrawn therefrom, and who shall have paid all subscriptions due from them to it, will not be required to pay a fresh entrance fee if they shall be re-elected in the year 1876."

The meeting, which was not very largely attended, differed as regarded the conduct of its proceedings from, it may be said, all the public meetings of the Society held during the past three years, inasmuch as there was an almost complete absence of the contentious spirit which has invariably pervaded the discussions at the meetings held in the time indicated. Both at the Council table and in the body of the room an anxious desire for harmonious action was manifested, which resulted, as might be expected, in a satisfactory termination to the day's proceedings. The members of Council present were, besides Lord Aberdare and Lord Alfred Churchill, Sir Trevor Lawrence, Bart., M.P.; Colonel R. Trevor Clarke; Mr. Henry Webb (Treasurer); Dr. Hogg, F.L.S. (Secretary); Dr. Denny; Mr. W. B. Kellock, F.L.S.; Mr. Robert Warner, F.L.S.; Mr. Wm. Haughton, and Mr. F. Campton. Amongst the general body of Fellows present were Sir Henry Thring, C.B.; Dr. Pinches, Mr. J. A. Hardcastle, Mr. Godson, sen., Mr. Alfred Smee, Mr. G. F. Wilson; Mr. Edgar Bowring, C.B.; Mr. H. Liggins, Mr. S. Hibbard, Dr. Masters, Sir Peter Pole, Mr. West, Mr. Richard Redgrave, &c.

THE CHAIRMAN (Lord Alfred Churchill), in opening the proceedings, said that in the unavoidable absence of the President of the Society, Lord Aberdare, he had been requested by his colleagues on the Council to take the chair until such time as the President should arrive. The amended summary of the privileges of Fellows for the year 1876 was circulated in the room, and he presumed that each Fellow was supplied with a copy. He might remark that Lord Aberdare was most anxious to address the meeting on the amended rules, as the subject was one in which he took the liveliest interest, and his Lordship hoped to be present before the meeting was brought to a close [hear, hear]. The previous policy of the Council had been characterized as a policy of restriction, but their present policy, illustrated by the proposals involved in the amended summary of privileges, was one of concession, for it was felt by them that by treating the Fellows liberally the Society would be more likely to obtain their support, and thus insure for it a career more prosperous than its past one had been. At the present time there was a greater necessity than ever for harmony amongst the Fellows [hears], because the income of the Society had been diminishing for several years past. Under ordinary circumstances the rent of the gardens should have been paid this year; but the fact was the Council had not the means of discharging the rent, and accordingly the Royal Commissioners had given them three years more of grace in order that the Society might be enabled, by means of certain alterations, to raise their annual income to £10,000. Their income was little more than £7000, and up to the present time this year they had only received £3000; but of course the year was yet young. It was to be hoped that those who were now being liberally treated would come forward and aid the Society with their subscriptions [hear, hear], and that the plan now proposed would have the effect of bringing a very large addition indeed of numbers to the Society, and consequently a proportionate increase of funds [hear, hear]. The Society's trade debts were heavy, but if the proposals now submitted by the Council to the Fellows were received by the latter in a generous spirit and loyally supported by them, the Society would be able to borrow money sufficient to discharge those debts, and to place it in a more flourishing condition than it occupied hitherto [applause]. It should be clearly understood that if they failed at the end of three years to raise the income of the Society to £10,000 annually the Society could not exist any longer, and

* The Council reserve power on four occasions annually to have receptions, at which none but Fellows and bearers of their transferable tickets shall have a right to be present without special invitation.

the Council certainly would not be justified in incurring expenses they should not be able to meet [hear, hear]. He should like to refer for one moment to the privilege lettered C in the amended summary of privileges. It reads thus:—"Six-guinea family ticket.—Two-guinea and four-guinea Fellows by raising their subscriptions to six guineas will be entitled to receive, in addition to the privileges of four-guinea Fellows, one extra transferable ticket, giving admission to the bearer on all occasions; and, except to fêtes, conversations, flower shows, and reserved occasions, to the whole of the owner's family resident in his house, including necessary attendants not exceeding two." Now, he confidently submitted to the Fellows that that rule, besides being a conservation of old privileges, made an addition of new ones which he doubted not the Fellows could not fail to appreciate [hear, hear]. Turning to the condition to which the Council had been brought, the noble lord said if he were asked why it was that the Society had not risen to a state of prosperity, he should answer that it was to be ascribed to the schisms and the dissensions which had for some years racked the Society and placed it in a most unfortunate position [cries of "hear"]. And now, when there was the prospect of a better state of things, he confidently asked, and he felt his appeal would not be in vain, that at this critical juncture in the life of their Society there should be unanimity amongst the members [cheers]. They had before them the munificent offer of Mr. Freake to lend a large sum of money to extricate the Society from its difficulties; but he would remind the Fellows that even that munificent act would not of itself have the desired effect unless the members of the Society were unanimous in their action [hear, hear]. That fact he felt he could not too strongly impress upon the minds of the Fellows; but he was fully assured that at such a time—with interests dear to them all at stake—with the fair chance of bringing round the Society to that position of independence and usefulness which in this great community it ought to occupy, with the fact before them that they had been met by the Royal Commissioners in a liberal spirit, and that through the voluntary action of the Commissioners they had obtained a very fair and reasonable time to pay the rent of the gardens, the Fellows, sinking all minor differences, would work earnestly and well for the attainment of that desideratum which could alone save the Society—the raising of its income to £10,000 a-year [cheers]. After all that would not be so difficult of accomplishment if only the Fellows gave a loyal and a persistent support to the Council, who would leave no stone unturned to bring about a prosperous condition of the Society [applause]. In conclusion of his remarks the noble lord observed that for Fellows in or joining the Society there was no personal responsibility beyond that of their yearly subscriptions [cheers].

Mr. ALFRED SMYTH.—I apprehend, my lord, that the great thing for us to do on the present occasion is to settle the question of the reception of the annual report of the Council [cries of "no, no"].

A FELLOW.—Oh, that has been done [hear, hear].

The CHAIRMAN (Lord Alfred Churchill).—I may say the report of the Council was accepted by the Fellows at the last meeting; and after that was done Lord Aberdare rose and said to the meeting, "If you like to appoint a committee to confer with the Council on the question of the privileges of the Fellows for the year 1876, this is the time to do it;" and this amended summary of the privileges is the result of the conference which has taken place [hear, hear].

Mr. A. SMYTH.—I thought it was prior to that Lord Aberdare made that statement.

The CHAIRMAN (Lord Alfred Churchill).—Not at all; it was exactly as I have told you.

Dr. PINCHES observed that he had so often found himself in opposition to the ruling powers of the Society, that he scarcely knew how to speak on the present occasion when he had the almost previously unknown happiness of not being in opposition [cheers and laughter]. Briefly he would say that it might probably be within the knowledge of the Fellows that at the meeting of the Society last December, after a very long and important discussion, he had felt it his duty to move an amendment to the propositions which were then submitted by the Council with respect to the privileges of the Fellows of the Society; his amendment being to the effect that the Council should be asked to reconsider the regulations respecting the privileges of the Fellows of the Society for the year 1876. And in doing that he expressed his regret that the Council of the Society, in putting forth the revised code of privileges, did not submit them to the Fellows for an expression of their opinion upon them [hear, hear]. His Lordship in the chair seemed to be in some doubt as to the fate of the amended summary of the privileges now submitted by the Council to the Fellows of the Society. He (Dr. Pinches) was of opinion, however, that the general desire was to elicit the opinion of the Fellows as to the desirability of receiving and approving these amended regulations or not [cries of "hear, hear"], and to express an opinion that the Fellows should be glad that the Council was fully prepared to carry out

the amended regulations [hear, hear]. One could easily understand in dealing with the affairs of a Society placed in so unfortunate a position as theirs was that some means for mending the position of the Society would be sought for; and it certainly was not unnatural for the Council to suppose that there had been an abuse—and it was a very fair interpretation—with respect to the transfer system of tickets, to suppose that it was not calculated to induce those who were not Fellows of the Society to become so [hear, hear, and cheers]. But he was sorry it had not occurred to the Council that they had overlooked one very important feature in the case, which indeed he had overlooked himself, as he had not known it himself, and that was the fact that there were many gentlemen—indeed ladies and gentlemen—who had paid considerable sums of money for certain privileges and made a contract with the Society for their enjoyment when they, no doubt, thought the Society would exist in perpetuity [hear, hear]. And again, he was reminded that the life Fellows, and ladies and gentlemen living at places remote from these gardens, felt that if they had not the power to transfer their tickets they had in fact paid twenty guineas or forty guineas for nothing whatever [applause]. That was a point which the Council had overlooked, and which he himself had overlooked. Well, that point being disposed of, they had to consider whether the new regulations did contain the germs of a satisfactory basis, or did they contain everything the Fellows could reasonably expect to have. That was, or rather these were, the questions the meeting had to consider [hear, hear]. There was no question whatever that the Fellows had preserved to them all the privileges they had hitherto enjoyed in their integrity; and in addition to these there was a most important, and to his mind valuable, concession in the clause lettered C [hear, hear]. If they were to expect an accession of Fellows to raise the resources of the Society, they must look forward to a large number of householders in that wealthy and populous neighbourhood joining the Society. One of the difficulties with which they were obliged to deal was a disinclination on the part of members to remain in the Society because they had to pay a considerable sum of money for the enjoyment of very few advantages as far as their families were concerned. But now a forty-guinea Fellow can bring in six Fellows in this neighbourhood, which seemed to be fruitful in the production of large families [a laugh]. In it every householder had at least three or four nurserymaids, and perhaps six, or eight, or ten children [laughter] who could now avail themselves of the advantages of the gardens; and by a family ticket not only the heads of families would be admitted, but admission was given to individual members of families, who were unable always to have the opportunity of coming to the West End, by having separate tickets. In addition to that there was a feature which had existed in all the regulations of the present Council—that was in No. 1, by which a Fellow may bring in members of his family. So the meeting would observe that, besides the conservation of the privileges the Fellows enjoyed anterior to the promulgation of the last paper, they had the advantage of procuring a family ticket for six guineas, and besides the advantage of buying other tickets at a reduced cost [hear, hear]. What, then, were they doing with respect to subscribers? They would no longer have those pretty little books of tickets which would fetch a round sum of money as waste paper [laughter]. They were of little use now, because the last Council did certainly restrict the privileges attached to these tickets in so far that they were not available on promenade days. It was the intention of the Council to restrict them in that way. They had asserted a perfectly unimportant principle, but they would have the advantage of a more select assemblage in their gardens [hear, hear], because no one was to come in by payment, but any Fellow could bring in anyone who called on him by buying a book of twenty-one tickets [hear, hear]. He had endeavoured to place before the meeting the debtor and creditor side of the account, and the advantages seemed to him to be all very much in favour of the Fellows. Could anyone deny that some concessions might be reasonably asked of the Fellows in the face of the difficulties which beset the Society? [hear, hear]. The abandonment of these tickets was one of a most trivial character [hear, hear], and there was not one they could more reasonably ask for. The fact remained—they must raise the income of the Society, and they all knew that a "house divided against itself must fall." He did believe most sincerely and honestly that one reason why the fortunes of the Society had not risen as they ought was the multiplicity of divisions and schisms which had racked the Society to pieces [loud cheers]. If the Council has been wise enough and good enough to take earnestly and seriously into consideration the difficulties in which the Society was placed, the Fellows in return should meet them in the same spirit and adopt the suggestions placed before them with perfect unanimity [applause]. Because, it seemed to him, that whether the Society was saved or not was a moot question, but there could be no doubt the Society must be relieved from its difficulties, and that could only be done by the motive and anxious desire to bind themselves all together for the benefit of the Society [hear,

hear]. A critical question was impending over them. They had less than half the funds they should have because the dissensions hitherto existing in the Society had operated most injuriously in a quarter where they looked for munificent aid; he referred to the proposition of Mr. Freahe to advance the Society £5000 or £7000 to extricate it from its difficulties. Of course Mr. Freahe, like any man of sense, hung back as to his venture because he did not know what the Society was going to do, and saw the whole concern was being pulled to pieces; but if they went before the public with a scheme, and exhibited unanimity with respect to it, he had no doubt that would have so great an influence on Mr. Freahe that he would no longer hesitate to do what he promised [hear, hear]. He must say the action of the Council in this case met with his entire approbation, and entitled them, not to his thanks, but to the thanks of every Fellow of the Society. If the adoption of the proposals had been moved he should be happy to second it [cheers].

Mr. ALFRED SMEE said he believed the true policy to be pursued was to get all parties together, so that they might act with unanimity. He begged, however, to state most emphatically that nothing that all of them could do could damage the Royal Horticultural Society [hear, and a laugh]. Although the Society might be short of funds, or that it had gone down in its funds, the Royal Horticultural Society still would rise [hear and "question"]. The Society could never receive any injury, but while they were saddled with creditors they must provide the necessary means to pay them [hear, hear]. How were they to keep up their expenses? This summary of amended privileges would not bring them out of their difficulties. It never would do that. Even if they did not support their Society it would still remain as it was [laughter]. They must fall back upon some method by which to increase their income. Let them look at the Alexandra Palace and other places of amusement. They might have skating rinks and ice places, and he should be happy to inquire how they could have ice winter and summer. Still, however, they might introduce novelties. Unless they kept up their horticulture they should never maintain their gardens or their position [hear, hear]. He again asserted that nothing could damage the Royal Horticultural Society in itself. The question they had to decide was, how, under their present circumstances, they proposed to go on until final arrangements were made, so that the Society might go on prosperously.

Mr. HARDCASTLE said he wished to express on his own part—and he did so quite personally, although he dared say all the other members of the committee appointed to confer with the Council agreed with him—his great satisfaction at the step the Council had taken that day [cheers]. He did not say that satisfaction was qualified by something which fell from the chair, but at any rate he could not take more than his just share of responsibility for the action of the committee. As far as he understood these regulations, they appeared to be founded upon an exceedingly good principle, although possibly some of the details might require amendment. The Council had adopted, and in fact must adopt them on their own responsibility [hear, hear, from members of Council]. Of course, the Society was only too glad they should take the responsibility, the Society being convinced at the same time that the regulations were based upon highly honourable principles [hear, hear]. He might be permitted to state what perhaps was known to most ladies and gentlemen present, that as far as he had had the opportunity of studying the regulations, they were substantially what were submitted by one member of the committee to the Council, and to him whatever credit can be given was due to him for having devised these regulations [hear, hear]. He (Mr. Hardcastle) did not wish to criticise them, because he thought that in the second section there was mention made of the "owner" in this way:—"Each four-guinea Fellow is entitled to two transferable tickets, admitting the owner on all occasions, with liberty to introduce personally four friends, except to fêtes, conversations, and flower shows, and on reserved occasions." Now in that section they had the word "owner," and —

A FELLOW.—It means "bearer" or "holder."

Mr. HARDCASTLE.—Oh, of course there is no doubt as to what it is meant for.

The CHAIRMAN (Lord Alfred Churchill).—The word in the printed list is a misprint.

Mr. WILLIAM HAUGHTON.—That is so; it is a misprint.

Mr. HARDCASTLE.—Very well; but it would be as well perhaps to have a qualified admission for servants up to a certain hour of the day; but I must say, as regards the other regulations, they appear to me to be based on a right principle. I will not take up the time of the meeting any longer, because I have just seen a friend of mine (Mr. Edgar Bowring, C.B.) getting on his legs. I hit down saying that I trust the meeting and the Society generally will accept these regulations unanimously [cheers]. I think, my lord, it is most important that if these regulations are accepted at all they should be accepted unanimously [applause]. By adopting such a course we should prevent the recurrence of those dissensions which have unfortunately too

long prevailed in the deliberations of the Society, and which, I am not without hope, will eventually cease to be one of the features of the proceedings of the Royal Horticultural Society [cheers].

Mr. EDGAR BOWRING, C.B.—I think it would be much the best course if the Fellows agree with my suggestion that the meeting should first approve of the proposed regulations which the Council has submitted to the Fellows [hear, hear]. I shall be very happy to second the adoption of these regulations if any gentleman moves it.

Dr. PINCHES.—I will move the adoption of the regulations with much pleasure [hear, hear].

Mr. BOWRING said he was glad the motion had been proposed by Dr. Pinches, and thought the few words he (Mr. Bowring) had to address to the meeting would be found of a highly satisfactory nature. He had to state that on his way to that meeting he met Mr. Freahe, who said he was sorry he had not known the meeting was to have been held. Mr. Freahe authorised him to state on his behalf that without considering these regulations *per se*, if the meeting adopted the propositions of the Council, if there were no differences of opinion upon them or unnatural dissensions amongst the Fellows, he was still prepared to carry out his munificent offer of advance of money to the Society [loud cheers]. On that point he might say no more [hear, hear]. He entirely concurred in the opinion that unless something was done to place the Society on a proper basis they should lose a number of their country Fellows and their London Fellows as well, while very few fresh Fellows would come into the Society. He was very glad, therefore, to see the way in which the Council had come round to the views of the Fellows. He would most earnestly urge upon the Council and upon all the Fellows that it was of the very greatest importance to recover the Fellows they had lost [hear, hear]. He had every reason to know that most of the Fellows left the Society because of the loss of their privileges, which left their membership of no use whatever to their families. Let the Council make a special appeal to these Fellows. He should make the suggestion that a gentleman should be appointed to go round to those Fellows and bring them back to the fold of the Society [hear, hear]. As to getting an accession of fresh Fellows, he thought they should take some strong and immediate steps to induce people to join the Society. He should say there ought to be a systematic house-to-house canvass in the interest of the Society in that great, wealthy, and growing neighbourhood. He need not detain the meeting with any further remarks. He saw every appearance of perfect unanimity on the questions before them, and he felt very happy in seconding the motion proposed by Dr. Pinches, that the propositions of the Council contained in the Amended Summary of Privileges of the Fellows for the year 1876 be adopted by the meeting [cheers].

Sir HENRY THRING, C.B., said he was extremely happy to see the meeting unanimously in favour of the reception of these rules. When the Society did come down, come down they must [cries of "no"]. Well, he wished to explain shortly what a society like theirs was. On various occasions he had heard gentlemen call themselves the "South Kensingtonian" and the "Horticultural" party respectively, who never had anything to do with the meetings of the Council.

[Lord ABERDARE, the President of the Society, here entered the Council-room and took the chair, which Lord Alfred S. Churchill vacated as soon as the noble President was seen approaching the Council table.]

Sir HENRY THRING, in continuation of his address, said they had heard the Society could not exist unless under the Charter. He pledged his legal reputation it was not possible for it to do so. They should all like to see the Horticultural Society rise like the phoenix from its ashes, but they were anxious to see how that could be accomplished. Some twenty years ago the Society chose to accept a fresh charter, and that was the one under which it existed. It possessed in South Kensington a garden, whether for good or bad, but at any rate the garden at Chiswick was the property of the Society. The Society must remain in unity or cease to exist [hear, hear]. It must retain both gardens. There was no law by which one party in the Society could call itself the "Royal Horticultural Society" and the other the "South Kensington Society." He pledged his legal reputation to the meeting that under the Charter they could not separate their gardens. What would be the effect of all this quarrelling? They had three different Councils in office during the last four or five years. The first Council was turned out for some reason or other; another came in which was not very flourishing, and the Society became in a worse position still. He did plainly assert they were on the verge of ruin [no, no]. Let them look boldly into the future if they wanted to have a brighter prospect for the Society. Let them have a house-to-house canvass [hear, hear]. Every man must exert himself to save the Society. When he first came to that neighbourhood eleven years ago the Society had an income of £7000 a-year. They must all pull together, and not come there to talk a lot of balderdash [oh, and laughter]. It was not a

question of science at all, it was a question of money [hear, and laughter]. Unless they could raise their income to £10,000 annually in three years' time the name of the gardens—horticultural science and all, would be gone [cries of "never" and some laughter]. Well, perhaps they would let him turn for a moment to the privileges which they either must pass or must liquidate like any bankrupt society, and have their property sold, their flowers sold, and their name destroyed. A great deal had been spoken about the Royal Commissioners. He was not himself a Commissioner, but they were told the Commissioners had not done this or done that, but the Commissioners had given their ultimatum. The Commissioners were a public body who would not sacrifice their property unless for the purposes of advancement of science and art. It could not be tolerated that scientific horticulture was to be abandoned [cries of "hear"]. The two must go together or cease to exist. Well, what was the ultimatum of the Commissioners? It was that the Society was to raise its income to £10,000 a-year. Why was that? Because without that amount of income the gardens must be given up. The fact was the Society was on the very verge of ruin—on the very verge of bankruptcy [cries of "no" and a voice "hear"]. They wanted to raise £10,000 a-year, and they wanted everybody to endeavour to persuade his friends to help them in their very great and very palpable difficulties. He must say that the Society, or at least the Council, might have expressed an opinion that it was not intended by these new regulations that people should give their next-door neighbours tickets of admission to the gardens.

A FELLOW.—Oh, not at all [hear, hear].

SIR HENRY THRING.—Well, then there ought to be an honourable understanding that these tickets will be given only to those people who cannot afford to pay for admission to the gardens [oh, and symptoms of impatience]. In conclusion of his address, which was listened to with manifest signs of disapprobation and impatience, Sir Henry Thring said that if anything fatal happened to the gardens the splendid property of the neighbourhood of South Kensington would be seriously damaged [hear, hear].

MR. SHIRLEY HIBBERD said the country Fellows of the Society would undoubtedly be glad—in fact delighted, to hear that there was at last a prospect of peace being restored [hear, and oh]—yes, restored to the Royal Horticultural Society [hear, and cheers]. It was only with the case of the London Fellows that any difference might be expected. It would be as well that they should be all ready to join together, heart and hand, for the benefit of the Society; but it would be as well to know the conditions or the considerations out of which the troubles arose, and which brought about the amended summary of the privileges for Fellows for the year 1876.

MR. HENRY LIGGINS.—Bygones ought to be bygones [loud cheers].

MR. SHIRLEY HIBBERD.—I think so too [laughter]. He went on to say, that while he should not criticise this amended summary, he would say that on the 9th of December when the question of these privileges was discussed at some length—indeed at very considerable length—not one of the country Fellows offered any opinion upon it, and he was really very glad that the case was the same to-day. He had his own doubts as to the policy of the paragraph lettered C, but the proper course was to hope for the best and to let things take their course [hear]. The members of that district might be sure of this, that the country Fellows would sooner see this made a most beautiful town garden, and that they would not object to the expenditure of money upon it, than to have it in its present condition. As far as he was concerned he should like to have the gardens so beautiful and so well managed that the inhabitants of that very district in which they then stood would feel themselves degraded if they were shut out of them. He was prepared to provide some portion of money for that purpose and to —

A FELLOW.—How much money? [laughter.]

MR. SHIRLEY HIBBERD, not taking the slightest notice of the query addressed to him, went on to say that it would never do for that meeting to be allowed to separate, and to allow the whole affairs of the Society to be ruled by the fortuitous arrangement of circumstances, which might, and would probably, bring about the result that next February they would find at the annual meeting of the Society the condition of the latter much worse than it was at present, and that perchance the Society had disappeared altogether in the interval [cheers and laughter]. He thought it was most decidedly necessary that they should all meet shortly and hear something like a report from the Council as to the manner in which this amended summary of privileges had been received in that very district of Kensington [cries of "no, no"]. Time was an element of the utmost importance to bring the affairs of the Society to rights. If the Society lived six months it would be a perfect miracle [laughter]. However, let them hope that the Fellows would largely increase in number through the action of what was now pretty well known amongst the Fellows as the "Amended Summary of Privileges of Fellows for the year 1876" [a laugh]. If they all met in two months from the present time, and the Council told them that the

number of Fellows of the Society had considerably increased, then indeed they might entertain every hope that their income would be augmented to the extent of £10,000 per annum [a voice "hear"]; but in the meantime they had an arrangement to make with Her Majesty's Commissioners, they had also before them the proposals for negotiations for a loan, and he was fully persuaded that under present circumstances it would be premature for the Council to complete any arrangement with Her Majesty's Commissioners, and that it would also be unwise to negotiate a loan, or if such negotiation were on foot to bring it to a completion. He confidently contended this, that the Society ought not to increase its debts to the extent of one farthing [hear, hear]. Let them see what it was best and most judicious for them to do. It would be most unjust, it would be most indecent, for them to borrow money at the present time from any one who was willing to lend it ["no" and murmurs of disapprobation]. Well, he was of that opinion, and he should therefore move a resolution to this effect:—"That the Council of the Royal Horticultural Society do report proceedings to a special general meeting to be held on Tuesday, the 25th, and that they be instructed not in the meantime to complete arrangements with Her Majesty's Commissioners, or to obtain a negotiation for a loan of money" [loud cries of "no," and some interruption]. The object he had in view was that the Council should call the members of the Society together at a certain time, so that it could be decided whether they should be allowed to proceed as they proposed to do at the present moment [no, no]. Well, but they knew the present moment was a dangerous time, and that they were placed in very extraordinary and exceptional difficulties. They had very little money in the bank, and in two months hence there might be placed before them some reasonable proposals which all of them could accept.

THE PRESIDENT.—That should be the matter of a separate resolution. We are here to-day to decide upon—to consider the Report agreed upon by the Committee and the Council with respect to the privileges of the Fellows of the Society. If there is a common expression of a wish—if there is a desire—that the propositions of the Council should be considered some months hence I shall have to say something to that hereafter. I do not know whether the adoption of the propositions of the Council of the Society has been yet proposed.

DR. PINCHES.—I have very great pleasure in moving that they be adopted [cheers].

THE PRESIDENT.—Dr. Pinches has moved the adoption of the propositions with respect to the privileges of the Fellows for the year 1876.

MR. EDGAR BOWRING, C.B., was understood to second the resolution.

MR. WILSON said he wished to say a word with respect to the concessions which had been made by the Council. There was a very great feeling in the country with respect to the fact that a very large body of horticultural Fellows had not joined the Royal Horticultural Society, but there was no doubt they would join the Society if they saw they could come into it on the former terms hanging on to their subscriptions. If they could come in for a guinea subscription as pure horticulturists they would come. If they could canvass for members of the Society when going through the country, he believed they would get a larger number of members than they could get in the immediate neighbourhood in which the gardens were situated. They were very hard-up now, it was a matter he had thought over a great deal, and he was of opinion that by getting a considerable accession of country members they might largely recover the position they had lost [hear, hear].

SIR PETER POLK remarked that discussions having taken place there in public as to their Society having broken down, a slur had been cast upon the Society in certain quarters. He had supported the Society all through its difficulties, and his reason for rising on that occasion was to state he considered this paper—the amended summary of privileges most liberal [hear, hear]. He had reason to know there were several persons who, from the knowledge that they should have to surrender their privileges, had withdrawn their names from the Society; and he knew five who, by reason of the liberal scale of privileges now offered by the Council, would become members of the Society directly [cheers]. Letters had been written to him on the subject of the Society, asking him whether it would hold together or not; but he did not give his opinion in that sort of way, but let people judge for themselves [hear, hear]. But, this he would say, that after the meeting which had taken place that day he honestly and sincerely believed that, instead of their Society breaking down, it would rise to what it was before [applause].

THE PRESIDENT wished to observe that anyone who had paid under the former regulations would have returned to them so much money as was in excess of the amount they had now to pay [hear, hear].

MR. HENRY LIGGINS said he had listened attentively to the propositions placed before the meeting, and thought they ought to be very grateful to the Council for having acted upon the sug-

gestions made to them. What they had to do was to attract Fellows back again, and act with unanimity amongst themselves. They must leave it to the Council to arrange the shows and entertainments which would be attractive to horticulturists. That, he contended, was the duty of the Council, and not of the Fellows, and he had no doubt it would be honestly and properly discharged [hear, hear]. He thought the noble lord in the chair came in a minute or two late to hear the most gratifying statement ever made in that room. It was one sufficient in its results to take the Society out of its pecuniary difficulties, and, if they had no pecuniary difficulties, whatever others they might have to contend with, they were to receive that magnificent sum of money, for which ample security would be given to the gentleman who had made this splendid offer of assistance to the Society, and who deserved their warmest and most sincere thanks [cheers]. He hoped the Council would not hesitate to receive that money, and not entail the necessity of having an adjourned meeting convened to consider the propriety of accepting the offer or not. He thought they must assume that, acting as they were on their own responsibility, they ought to be satisfied with the noble offer made them, and honourably and honestly accept the loan [hear, hear]. He hoped there would be no further adjournment of the meeting, and that the propositions placed by the Council before the meeting would be agreed to [hear, hear].

Mr. WEST begged to offer a suggestion, which was, that they should establish a band fund, and ask their friends to contribute to it.

Mr. RICHARD REDGRAVE expressed his opinion that the propositions of the Council regulating the privileges of the Fellows were far more liberal than they could have hoped for [applause].

The PRESIDENT.—I can assure you, ladies and gentlemen, that nothing but an overwhelming necessity could have prevented me being here at the commencement of the proceedings. It would, I can assure you, have been very pleasing to me to have been present at the first ebullition of unanimity which the Society has experienced for some time past [hear, hear], and which I have, I think, well-founded hope will characterise its proceedings in the future [hear, hear]. On the last occasion of our meeting in this room I made as strong an appeal as I could to the members of the Society to meet us with something like a unanimous feeling. I wished to keep before the Society the recollection of this fact, that ever since the dissensions three years ago the Society has been going down, and that the first step towards a better state of things is unanimity [applause]. Well, the Council have issued new or amended rules; but do not suppose for one moment the Council think these rules constitute a self-acting machinery. They hope these rules will bring into the Society many who are holding back from it; that they will bring to us some persons who can help us in the restoration or the raising of the necessary funds; and that must be done by a great deal of exertion on the part of the Council, and by other persons interested in the prosperity of the Society, taking the steps necessary in the case, and adopting those measures which are likely to bring about the end we all have in view—to place the Society on a sure and solid basis. I have no doubt among those measures there will be an active canvass in this district. I quite agree with the suggestion that a statement of the affairs and prospects of the Society, carefully prepared, should be issued; and that there should be personal exertions made in the district, which could be divided into sub-districts, trusting the work to gentlemen who will kindly give us their time and take the trouble to canvass those who are in a position to assist us [hear, hear]. I anticipate a resolution with respect to the funds which Mr. Bowring says Mr. Freake has so kindly and so generously promised to place at our disposal. An observation was made by a Fellow as to our giving ample security for that munificent loan. Well, really the Society can give no security; but the Royal Commissioners have offered to go security [cries of "hear"] for the payment, not of the interest, but of the capital [applause], at the end of three years, in order to put the gardens and the whole concern into what may be called a healthy and attractive condition [cheers]. We have first of all to pay our debts, then to put our conservatories, &c., into a proper condition, in order to enable people to see that they get the value of their money. Let it not be supposed all this money is to be laid out here, because we are bound to take into our most careful and serious consideration the question of what can be done for the extension and improvement of horticulture [loud cheers]. Various suggestions have been made as to how we can best gain an accession of members to the Society, and that made by Mr. Wilson is especially worthy of attention, because the machinery for making members throughout the country is a still more difficult matter than that of making them in the metropolis. We have made, we think, a considerable concession in proposing to issue non-transferable tickets at half a guinea per annum, admitting to all shows, scientific meetings, and lectures of the Society (but not to promenades nor on reserved occasions), and to the Chiswick Gardens on week days to *bond fide* gardeners recommended by two Fellows. That I

consider is a considerable concession [hear, hear]. If we see our way to enlarging our constituents without unduly affecting the receipts we expect to get we shall be very glad to do so; but, at the same time, it is not a very easy thing to draw up a distinction between these and the class of subscribers Mr. Wilson speaks of. I can assure the meeting I am delighted we have at last met harmoniously; and I believe when it is known we are acting harmoniously, not only will we get the interest of Mr. Freake's money, but the Society, which for some time past has not been spoken of with anything like respect, will recover its high position [cheers]. We have been fouling our own nests—that is the fact, and no wonder people take us at our own words [hear, hear]. If we speak injuriously and contemptuously of the Society it is no wonder that this should be the case [hear, hear]. However, we are on the verge of better things, and I am truly delighted that these rules—these regulations as to the privileges of Fellows, for which we are so indebted to Dr. Pinches—meet with your approval [applause]. We are also equally grateful to Dr. Pinches for the readiness with which he has given us valuable suggestions, and it is impossible for me to sit down without expressing my thanks to him [cheers]. I will now put it to you that these rules be accepted; but I don't know if Mr. Hibberd perseveres with his motion.

Mr. SHIRLEY HIBBERD said that after the able and exhaustive statement of the noble Chairman, and on account of the happy unanimity which prevailed in the meeting, he should gladly withdraw his motion [hear, hear].

The motion for the adoption of the "Amended Summary of Privileges of Fellows for the year 1876" was then put and carried with one dissentient, in the person of Mr. Godson, sen., who attempted to explain why he had voted against the motion, but whose remarks were inaudible.

The announcement by the President that the motion was carried was received with loud cheers.

On the motion of Dr. Pinches, seconded by acclamation, a hearty vote of thanks to the President and Council was passed, and then the meeting broke up.

NOTES ON VILLA AND SUBURBAN GARDENING.

SEED-SOWING.—Doubtless one of the most important preliminary operations before committing seeds to the ground is the proper preparation of the soil. Many seeds often fail to germinate, or if they do germinate the plants refuse to thrive, through the want of this precaution; and how vexatious it is to have to sow over and over again, and how difficult it is to keep up a proper succession of anything when this is the case. See the pains that is bestowed upon the working-up of a soil for small and delicate seeds of many choice flowers, and the relative application of heat and moisture to induce them to vegetate. Outdoors we cannot apply artificially this necessary assistance, therefore I think it is the more necessary that the soil should be well prepared. Villa gardeners would do well to study this more than they do, and as a first step pay particular attention to the drainage of the soil.

The nature of the soil and the locality, whether naturally porous or not, will govern the expense of draining; but as gardeners, whether amateur or professional, should use a good deal of water for their growing crops, the matter of draining is certainly important. Wherever draining is done, let it be so systematic that outlets be provided in proper places so that the pipes can freely empty themselves. We know what care is taken in this particular matter by gardeners for their Vine and other fruit borders in glass houses, and the advantages are well known. A well-drained soil is warmer than an undrained one, so that such a soil would sooner become warmer in spring—a great advantage for early-sown seeds.

The next thing is the proper working-up of the soil. There is a plan which many of our cottagers practise, but which cannot be recommended, and that is not to dig-up the ground till the time comes to sow the seed. It is much preferable to make the soil permeable by digging and trenching in the winter months, and then it would be found that at seed-sowing time the soil would work down finely, and be in a proper condition to receive the seeds. It sometimes happens that a stiff soil after this treatment is not easily worked-down by the rake. Soils of this nature should be improved by an addition of lighter soils at every opportunity, especially at the time of working the ground down for sowing. A little addition of lighter mould would assist the seed to vegetate.

Always choose a drying day if possible for seed-sowing, and work the soil down as finely as is called for by the size of the seed. For instance, the strong vegetating power of Peas does not require such a finely worked soil as that of Carrots or Lettuces. A seed absorbs moisture before it can germinate; and take it as a rule, the smaller the seed the finer the soil should be, in order that it may the better perform its functions through being placed in closer contact with it.

Next we come to the depth at which seeds should be sown. In this matter many are likely to fall into error. If seeds are

buried too deeply, and especially at an early season, many fail to come up, and many of those that do germinate are weakly. In support of this I will quote a very useful passage in Johnson's "Science and Practice of Gardening." It says, "The absolute necessity for the presence of oxygen is a reason why seeds will not germinate if buried beyond a certain distance from the earth's surface, and why clayey soils often fail of having a good plant—an impervious coating of clay enveloping the seed and preventing the air's access." It goes on to say that M. Burger found that "seeds of Rye buried 1 inch below the surface had their leaves above it in eight days and a half, whereas those at a depth of 6 inches had only just sprouted at the end of twenty-two days;" and further it says, "Too deep sowing inflicts another injury, though it be not at such a depth as to entirely prevent germination. It so consumes the matter of the seed in forming the useless elongation of stalk necessary to bring the leaves above the surface that all further progress in vegetation has been prevented." Enough is here quoted to warn anyone of the dangers of deep sowing, and I would rather err the other way, because when the plants are up surface soil can be conveniently added.

No doubt genial weather has much to do with the quickness at which seeds vegetate, because heat and moisture are the principal agents in influencing their progressive power. We find that in the case of such small seeds as Primulas, Cinerarias, Lobelias, and many others that these should not be buried under the soil at a much greater depth than the thickness of the seeds themselves, but then when germination has begun such a shallow covering should be kept continually moist, not so much by frequently watering as by a damp covering of moss until the seedlings are well up and have rooted into the soil sufficiently to bear a little light and air to add to their strength.—THOS. BACON.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

We like to have all the nailing done early; and as our wall trees receive nearly all the pruning and training they require during the late summer months, there is but little to do in the winter except to look over the trees, to re-arrange the young wood, and replace any fastenings that have decayed. Where there is a very large extent of walls covered with fruit trees, and not more than sufficient assistance to do the work, it is not easy to have all the wall-pruning and nailing done in good time, the more so when the winter has been severe; for even if men are sent to such work they cannot do it with the thermometer below the freezing point. The Peach wall is generally left to the last, and to make satisfactory work of this it is best to undo the trees entirely from the walls.

It may not be out of place to make a few remarks on the Peach as a wall tree. Nearly all stone fruits require a deep clayey soil to grow them to perfection, and to grow the Peach wall the soil must be deep good clayey loam, not stiff adhesive clay. If the soil contains too much clay, the best corrective to it is good leaf mould as free as possible from decayed wood; if the ground is not naturally dry it must be drained. On the other hand, light sandy soil may be improved by adding stiff clay. First, as to young trees. Of course they were selected and planted in the position intended for them in November, and the ground will have sunk down enough by this time to allow of the trees being pruned and nailed. The trees if they were selected from a good nursery will have three, five, or seven shoots. Now some growers would cut off two-thirds from the length of these growths, but if the trees were planted at the right time, and had plenty of fibrous roots, not more than one-third of the length should be cut off close. But no rule can be laid down, as much will depend upon the health and vigour of the trees. The two lower shoots should be brought down to an almost horizontal position, then the centre growth must be trained vertically, and the other growths equidistant between them. The same system holds good with the large bearing trees; the main branches should be nailed in first, and the young bearing wood must be judiciously placed between them.

If it is necessary to cut-back any of the young wood it must be cut at a triple bud; the middle bud of the three is usually a leaf bud. Very few of the smaller growths are furnished with leaf buds except the point of the shoot, which is always one. The round buds are all flower buds, and to cut at one of them is to destroy the growth, as no shoot will be produced. If the protecting material is not in good condition it must be seen to at once. Indeed, as soon as the trees are nailed this may be fixed if the canvas can be rolled up under the projecting coping, where it is protected from rain.

Apple and Pear trees intended to be regrafted should be headed-down at once if this has not been done, and the grafts may be put on as soon as it is seen that the sap is in motion. There is nothing now requiring to be done amongst the pyramid and other trees in the borders. The ground between them has been manured and dug.

VINES.

There is now plenty of work in the early houses, training and stopping the laterals which are now pushing very rapidly. Some varieties of Grapes do better trained on what is usually termed the short-spur system than others; the free-bearing varieties, such as Black Hamburgh, Muscat of Alexandria, Lady Downe's, Royal Vineyard, Mrs. Pince's Black Muscat, and a few others may be spurred pretty closely back year after year, and still continue to produce abundant crops. Other sorts must either have the spurs left longer or young wood must be trained-up from the base of the Vines annually. Canon Hall Muscat, Golden Champion, Gros Guillaume, Buckland Sweetwater, and White Frontignan must be classed amongst those that succeed best with frequent renewals of the young wood. The Canon Hall Muscat will not show bunches at all from closely-spurred laterals on an old rod. We train the lateral growths all about the same angle, say 45°; some persons train the young wood in a horizontal direction from the rod, but this is not usual.

Our Vines are now in flower, so that a higher temperature is being kept up with less moisture in the atmosphere. The Muscat house is about 75° at night, and the Hamburgh house 70° in very cold weather. If the glass registers 5° less than this we do not mind it. The bunches are gently shaken twice a-day, about 10 A.M. and 1 P.M. Late houses are all ready to start, but we shall not hurry them at present, as the houses are so useful for bedding plants until they can be placed under canvas out of doors.

Red spider may be expected very soon to appear in the earliest houses. A correspondent, "J.C.," makes some remarks on destroying it last week. His plan is reasonable and well worth a trial, but he ought not to say that "it answers no good purpose to paint the pipes with sulphur, but the reverse." Now we have repeatedly painted the hot-water pipes with sulphur and destroyed the spider. I have had so much experience in this that I can tell whether the fumes arising from the pipes is strong enough by remaining in the house for a few seconds, and when the fumes are strong enough the fire is checked at once. Mr. Rivers in one of his books recommended slaking lime in the house and throwing a handful of sulphur upon it. This we tried once, but the lime was not strong enough. Better lime was obtained fresh from the kiln, and the same process was repeated in a house of splendid Grapes just colouring, with the result that almost every leaf was killed in the house, and the crop lost for that season. That was my first and last attempt with lime. We only used a 9 or 10-inch potful of lime, but it caused the sulphur to burst into a flame. Of course, the pot was hurried-out immediately the flame was seen.

PEACH HOUSE.

When the trees in the early house are in flower the atmosphere ought not to be very moist—only sufficient to counteract the drying heat of the pipes. When the fruit is set the trees should be well syringed to wash off decaying petals, and the syringing to be continued daily. The Peach is more liable to the attacks of red spider even than Vines, but to syringe the Vines would be to sadly mar the appearance of the fruit, whereas the Peach is not injured in the least by the free use of the syringe or garden engine. Of course the water must be a little warm. All water used for syringing ought to be. The water-pots ought to be filled with water and placed upon the hot-water pipes, the water will thus be slightly warmer than the atmosphere of the house.

Continue to disbud, not rubbing-off all the shoots that will ultimately be removed; to do so may check the trees. One growth at the base and one as a leader to each shoot is the proper number to leave on. When the trees are in good health the fruit may be severely thinned very soon after it is set. About double the quantity that will ultimately be allowed to ripen should be left on until nearly the stoning period. If it is all right after stoning begins very few fruits will drop. We have thinned our fruit on the pot trees to the required number before stoning, and have lost but very few from dropping off. The inside borders must be well supplied with water. When in full growth the Peach requires a large supply, and dryness at the roots is very injurious.

CUCUMBER HOUSE.

The instructions given in previous numbers are so much like what is being done in this department that little additional need be said. We keep the night temperature up to 70° now, rising to 85° or 90° in sunshine. Plenty of heat and moisture in the atmosphere suits Cucumbers, but they may be overdone with moisture. In our small house are two 9-foot lengths of water troughs, and when these were both kept filled with steaming water the leaves became flabby and thin in texture. When one of the troughs was emptied an improvement was speedily apparent in the general health of the Cucumber plants. The importance of sufficient ventilation was found out by accident. The young man in charge used to open the top ventilators only, until it was observed that the plants were gradually becoming weakly, when we tried opening the front sashes just a little, admitting less air at the top; this soon told upon the plants for

the better. The modern system of glazing with large panes fitted closely almost entirely excludes air, except what is admitted by the ventilators.

GREENHOUSE AND CONSERVATORY.

The cold winds and unfavourable weather at this season should urge us to do all we can to make the above structures attractive. We always contrive to have the best display from now until the end of June; by that time plenty of flowers can be obtained out of doors. It is also necessary to be careful how the ventilators are opened. If the house is constructed with the ventilators to open on either side it is very easy to air the house on that side opposite to which the wind is blowing, and if the wind is not blowing quite a gale the side next the wind should be opened a little.

We are now busy with the Chrysanthemums. Specimen plants are being trained, and as they require it are repotted. The specimens are grown for exhibition, and it is necessary that they be started early, for although size does not go before quality, size and quality combined are the most desirable objects to aim at. The growing shoots are carefully tied down as they advance in growth. The plants intended for out blooms are now in a cool frame, to which air is freely admitted. It is necessary to fumigate them to prevent green fly from spreading. This pest must be destroyed at once.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

LIVERPOOL (Spring Show). March 5th. Mr. R. Wilson Ker, 6, Bassett Street, Church Street, Hon. Sec.

LONDON (Spring Show). March 15th and 16th. Mr. G. Forbes, 106, Hyde Park Road, Sec.

BIRMINGHAM (Spring Show). March 22nd and 23rd. Mr. G. Wesley, Hohn Wood, Westbury-upon-Trym, Hon. Sec.

GLASGOW. March 25th, May 10th, and September 13th and 14th. Mr. F. Gibb, Dughall, 167, Canning Street, Sec.

ROYAL CALLEDONIAN HORTICULTURAL SOCIETY. Shows April 5th, July 5th, and September 18th.

WHITTINGTON AQUARIUM. April 19th and 19th, May 10th and 11th, May 30th and 31st, July 5th and 6th.

TIVERTON. May 24th and 25th. Messrs. A. Payne and J. Mills, Hon. Secs.

MARCHESTER (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.

SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fulidge, 60, York Street, Sec.

MADDISON (Houses). June 21st. Mr. Hubert Bamsted, Rookstow, Maidstone, Sec.

SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.

BRIGHATE (Houses). June 24th. Mr. J. Payne, Treasurer.

BLOOMING. June 29th. Mr. A. Chancelor, Hon. Sec.

FLORIAN (Houses). June 30th. Mr. A. E. Bally, Hon. Sec.

SOVEREIGN. July 5th, 6th, 7th, and 8th. Mr. E. Martin, Sec.

HELMESBURY (Houses). July 12th and 13th. Mr. J. Mitchell, Sec.

WIMBORNE. July 15th and 16th. Mr. P. Appleby, 6, Linden Cottages Hon. Sec.

BRIGHOUSE. July 20th. Messrs. C. Jessop & E. Bawley, Hon. Secs.

HEWORTH (Horticultural). August 2nd. Mr. E. H. Feltow, Hon. Sec.

OLAY CROSS. August 15th. Mr. J. Stoddard, Clay Cross, near Chesterfield, Sec.

PRINCESTON. August 16th and 17th. Mr. W. Throgmorton, Hon. Sec.

SHREWSBURY. August 16th and 17th. Admits & Neanton, Hon. Secs.

SEATON BURK. August 26th. Mr. R. Richardson and Mr. W. Elliot, Secs.

DUNDEE (International). September 7th, 8th, and 9th. Mr. W. R. McKelvie, 80, Euclid Crescent, Sec.

TRADE CATALOGUES RECEIVED.

George Yates, 29, Little Underbank, Southport.—*Descriptive Catalogue of Select Vegetable and Flower Seeds.*

James Backhouse & Son, York.—*Supplementary List of New and Rare Alpine Plants.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (*Cultivator*).—The "Fern Book" is preparing for publication.

GARDEN PLANS (S. G. B.).—We know of no work teaching the mere elements of such drawing. London's edition of Repton's "Landscape Gardening" is full of information relative to drawing and designing gardens.

WRITH OYSTER (Herefordshire).—It is not uncommon. We cannot answer your other query.

ABOURA BEERIES (Calceolaceae).—An answer in our last number contains the information you ask for.

PRUNING FRUIT TREES (A. C.).—Mr. Rivers has published "The Miniature Fruit Garden," which contains directions for some kinds of pruning. Its price is 3s.

FUNGUS ON BROOK TREES (H. L.).—A creamy mixture of lime in a brine of common salt applied with a brush will destroy it. Some soot added to the mixture prevents the whiteness being an objection.

THUJA AURIA INJURED BY DOGS (F. M. S.).—Dogs, not cats, have caused the injury, and beyond what you have done to prevent a recurrence of the evil you can add nothing; congenial weather will do the rest. We could not without seeing the shrubs tell whether they will recover. All the parts affected as you describe will die, and probably the plants if the stems are injured.

HEELING BROCCOLI (*Idem*).—It is done to protect the plants, or rather their stems, from destruction by severe weather, the soil being taken out at the back of the plant in a sort of trench, into which is laid the stem of the plant with its head inclining northwards, the whole of the stem up to the neck being covered with soil, and the roots which will be exposed by the operation being also covered with soil, previous to which a good watering is given if the weather be dry. Layering checks growth, and enables the plants to withstand severe weather better than those not operated on. It should be done the early part of November.

PRUNING RECENTLY-PLANTED VINES (A Young Gardener).—The Vines with canes 6 feet long should be cut back to the bottom of the rafter or where you wish to originate side shoots or spurs; but as the time is past for pruning without a certainty of bleeding we should depress the points of the canes from whence you wish shoots originated, and rub off the eyes from which you do not require shoots, and should not leave more than three shoots—two side shoots and a leader, removing all others. Leave the fruiting canes in the pots.

PRUNING PEACH TREES (*Idem*).—Cut back the strong shoots half their length, and the moderately strong about one-third, and the others in proportion to their strength. The trees will be weakened by removal, and unless pruned they will make a very poor growth this season.

GRAFTING PEARS (F. J.).—Better not insert more than one or two grafts in a stock, and as near a foot from the ground as practicable. A dozen to eighteen grafts on each tree would in a measure fail, and if all grew the upper grafts would be the most vigorous, appropriating the sap. For a pyramid you must begin at the bottom and work upward, forming the tree in the second as in the first instance.

MANAGEMENT OF BEDDING PLANTS (*Idem*).—A fortnight is too short a time for keeping bedding plants in bottom heat after potting. They should be kept in the heat until well rooted, the roots working freely in the fresh soil; the plants should then be hardened off, placed in the cold frame, and kept rather close for a time.

PRUNING ROSES ON MANETTI STOCKS (*Idem*).—Cut away all the old and weak shoots, and shorten the others to four or six eyes according to their strength; but at the distance your plants are apart we should have at least twice the number of shoots you name, having some of the weaker wood pruned to two or three eyes. Now is a proper time to prune them.

TRANSPLANTING HOLLIES FROM WOODS (A Novice).—The best time to transplant Hollies from such a position as you describe is from the middle of April to the first week in May, according as the season is forward or late, they being best moved when commencing growth. We do not think you will have much success, as the roots are often long and fibreless near the stem, and being in the shade they do not, when moved to the open, do nearly so well as those grown in full exposure previously. We should now take out a trench all around the trees 2 feet from the stem, cutting off all roots in the trench, and going down as deeply as the roots extend. We should then fill in the trench and leave them until April twelvemonths, when you may be able, from fibres being formed near the stem, to move with a ball, at least doubling the hope of successful removal.

PROPAGATING VARIEGATED EUCONYMUS (A. J.).—Take cuttings of the young shoots after they become rather firm in July or August, and insert in sandy soil in a warm border, covering with a handglass, and shading from sun, or insert in pans or pots, and place in a cold frame kept close and shaded. Young shoots strike sooner in gentle heat.

PRUNING CLEMATIS JACKMANI (*Idem*).—Cut away the old and bare shoots, and leave those which have firm ripe wood with prominent eyes at about a foot distance apart, removing only their points down to good eyes. If you want shoots at the base you must cut back some of the shoots so as to give others at the places required.

TRIMMING NEWLY-PLANTED HORNBAM HEDGE (*Succisa*).—We should not trim it this year, but allow it to become established, and before growth takes place next year trim in rather closely.

EUCALYPTUS GLOBULUS (*Idem*).—It would succeed against a wall if the ground were well drained so as to insure dryness, but except in very warm sheltered situations it is not hardy. It is sufficient if the soil be damp, a wet soil only making it more susceptible of injury from cold.

PLANTING HARDY AQUATICS (H. H. F.).—The best time is during March and up to the beginning of May, but it may be practised at almost any season, but preferably in the spring.

NITRATE OF SODA FOR VINES (C. B.).—We have no information, but we should not object to applying 1 lb. dissolved in ten gallons of water. Try it to one vine, and inform us of the effect.

HANDLENITS (*Cheshire Amalour*).—We cannot give the information. Write to Mr. Gilbert.

SETTING CUCUMBER BLOSSOMS (A Beginner).—Apply a stamen of a male flower to the pistil of each female flower. "The Garden Manual" will suit you. You can have it free by post if you enclose twenty postage stamps with your address.

ANNUALS FOR ROSE HOUSE (S. B.).—For your unheated Rose house Tropaeolum and Convolvulus would be suitable for covering space quickly and effectively. Tropaeolum canariense, T. Lobbianum, and other varieties are rapid-growing free-flowering annuals. Convolvulus major, Ipomoea limbatia elegantissima, and I. Quamoclit may be grown, sowing the seed in April where the plants are intended to flower, except the latter, which should be sown in heat and the seedlings transplanted, as also should Lophospermum secundum and ornamental Gerards in variety.

ANNUALS FOR BEDDING (*Succisa*).—Convolvulus tricolor splendens forms a fine blue bed, and is lasting; Saponaria calabrica makes a splendid pink bed of long continuance; Nasturtium King of Tom Thumbs affords scarlet, and

Tagetes signata pumila yellow. The three first named may be sown in the beds early in March in drills, covering the seeds with their own thickness of fine soil. *Tagetes* with Stocks, Asters, *Phlox Drummondii*, *Petunias*, and Indian Finks are better raised in gentle heat, transplanting the seedlings in rich light soil, and at no period suffering them to become drawn by sowing too thickly or by a too long continuance in heat. Unless you have means to grow the plants on gently and steadily it would be preferable to defer sowing the seed until the last days of April or the first days of May, sowing then in rich light soil on a warm south border in the open air. All or any of the above will be useful supplements to your ordinary bedding plants.

PRUNING MARSHAL NIEL ROSE (*Wills*).—Do not cut away more than the unripened points of the shoots, leaving the shoots of 8 or 10 feet their full length if the wood is well ripened. It is a Tea-scented kind, and therefore a continuous bloomer.

CULTURE OF HEDYCHUM GARDNERIANUM (*H. B.*).—Repot when it begins to grow, removing the loose soil, and give a moderate shift. Water moderately for a time, but when in free growth water freely, maintaining a moist atmosphere, affording a light position. When the growth is complete admit more air, keeping drier and fully exposed to light. In winter keep rather dry and cool, but safe from frost, cutting away the old stems when yellow. Sandy fibrous loam and peat in equal parts, with a fourth each of leaf soil and old cow dung, with a free admixture of sand, is a suitable compost.

DIVIDING CRYPTANTHEMUM (*Idem*).—Take off the rooted offsets and insert them three in a 4-inch pot around the sides, and place in a cold frame until established, and when the pots are filled with roots shift into 7-inch pots, stopping when 6 inches high; or divide the plants, and retaining three to five of the strongest shoots to each division, and pot each singly, trimming-in the roots so as to be potted in 5-inch pots.

SOWING WALNUTS (*B. S.*).—It is best to sow them in the open ground in the autumn, when they will come up in the spring. They may still be sown, placing the nuts about 2 inches in the ground. The plants ought to be trained to single stems before allowing them to branch. The height of the stems may vary from 6 to 20 feet long. Walnut trunks are very valuable.

TRAINING VINES (*L. H.*).—We approve of fixing the wires in a horizontal position, and the lateral growths may be trained horizontally, but we prefer training them at an angle of 45° to the rod. It is probably ordinary mould that is around the buds; it would not be mildest after you had coated the rods with Glahurst compound. We hardly know how to answer your next question; it is, "Are coals injurious to plants?" Burning coals would be if the smoke and plants were confined together in a house. A few pieces of coal strewed on the ground would not be injurious.

PLANTS FOR BEDDING (*H. B. C.*).—*Tagetes signata* pumila, *Pedilla nankinensis*, *Centaurea candidissima*, *Ageratum*, *Saponaria calabrica*, and *Meembryanthemum tricolor* could all be used with the different sections of the bedding *Pelargoniums*. You merely say "*Geraniums*," which is not a sufficiently distinctive term to use when you write for the information you desire.

NORTH LAWN FLOWERS (*Amateur*).—The *Lobelia* and *Alternanthera* would, in a warm shaded place, retain their beauty longer than if more exposed to the sun.

GROWING GARLIC, &c. (*J. B., South Hackney*).—Send us five postage stamps and your full address and order "Kitchen Gardening for the Many." It contains all you ask for and much more.

SLOW-COMBUSTION BOILER (*A. B. C.*).—We have no experience of this boiler. Write to the maker and tell him your difficulties. Other answers next week.

INSECTS DESTROYING IRIS RETICULATA (*G. S.*).—The beetle "having devoured 1s. 6d. in the shape of a plant" is the common *Carabus hortensis*. The species of the genus *Carabus* are eminently insectivorous, their prey consisting of larvae, herbivorous beetles, and other insects, one of the species, *C. auratus*, being known in France under the common name of "Le Jardinier," or the Gardener, from the services it renders in gardens by destroying numbers of female cockchafers when in the act of depositing their eggs—hence we doubt the statement of "G. S." that *C. hortensis* had devoured his Iris, supposing that the mischief had been done by some other insect. Can "G. S." supply evidence to prove *C. hortensis* to have been the real culprit?—*L. O. W.*

NAMES OF FRUITS (*O. Y., Mortlake*).—Shepherd's Newington. (*W. G.*).—1, Tower of Giammi; 2, Baldwin. (*G. C.*).—1, Ronssel de Jonghe; No. 2 is Marsh Bergamot, and not Comte de Lamy. (*Connaught Subscriber*).—1, Cornish Gilliflower; 2, Not known; 3, Loan's Pearmain; 4, Dumelow's Seedling.

NAMES OF PLANTS (*Subscriber, Co. Cork*).—*Berberis japonica*. (*Mrs. Huddleston*).—The large leaf, *Cyclamen europaeum*; the round-leaved *Cyclamen coum*; the blue flower, *Omphalodes verna*. (*F. H. F.*).—Yours are florists' flowers, of which we cannot name varieties, they are too much alike.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY FARMING.

"A. B." writes to us for information, but as his locality is not named it makes it more difficult to advise. We confess we do not believe in poultry rearing and in keeping hens for eggs for purely domestic purposes. We do not mean that a few fowls kept about a house do not answer, for they do, and very often well, and there are not many country houses without them; but to go in for a large number because a few pay, on the principle that because ten hens lay 1200 eggs in a year that twenty hens must lay 2400, is where the mistake is so often made, and which brings such woeful disappointment on the breeder. No; we do not believe in poultry farming on the scale which so many think would pay—namely, of hiring so many perches of land, and erecting houses, stocking the runs, and then waiting for profits. We fear patience has to come into use greatly in such a case; for putting aside a per-centage for interest on money expended, paying for food, rent, labour, and such like must leave only a tiny balance

on the credit side, and then only when the proprietor does not leave the work to attendants but does the greater part himself, and is always at hand to superintend. The profits made by the Sussex and other county cottagers are of course great; but then they work on a small scale, and are so able to feed the birds and attend to them much more than if they had larger numbers. When their chickens are ready the higglers come round and collect them, and then other broods are brought up to take their places; but it is only because of the small size of their undertakings that they may make at times forty per cent. or even more, as no doubt they sometimes do; but once they were to get overstocked their game would be done.

We can never recommend anyone to invest money on laying out yards for poultry for table purposes. The expense would be great and the results unsatisfactory. It has been tried and proved by many to be a failure, and "The Poultry Book" tells us, too, that these establishments always collapse. They have had a very fair trial and the food has been various and good, but never has any real success been recorded. Companies, too, have been started, but the prospectus has invariably been drawn up upon some foolish and ridiculous basis, that it is needless to say they did not answer or would not have done had they struggled into life.

The largest scale of poultry farming for domestic purposes that can ever be attempted with success are the poultry yards connected with large farms. In such a case at one homestead it would be impossible to manage more than two runs where the birds could have perfect freedom and unlimited runs. Were we going to attempt the cultivation of poultry for eggs and chickens we should try and rent the farmyard of some large farm for the run of the birds alone. We believe this can be done and is actually being done. The food collected by the birds themselves in their wanderings over yards among the loose manure, around the cornstacks, in the fields, and in such places is immense, and would go a long way towards keeping them fed, and at the same time keep them in the most robust health. Ducks, too, might be added with success. Turkeys we would have nothing to do with. In no way depreciating them, but they are apt to be delicate and get in the way of growing chickens. Such a farm we would stock with Black Hamburgs for laying, and Brahma-Dorkings for table and sitting purposes. No doubt others can recommend breeds which with them have been very useful and prolific, in which case people would use their own discretion in their choice. We have found Black Hamburgs wonderful layers of good-sized eggs when kept in a farmyard, and we know the meat of Brahma-Dorkings is juicy and good. A good-sized farmyard where the cornstacks and foddering yards are numerous should take from fifty to a hundred hens. We would never go beyond that number. Supposing the birds could not be divided and all had to run together we would substitute Houdans for Black Hamburgs, as the former are good layers and they make a good table cross, otherwise the Hamburg eggs would be used for sitting, perhaps, which would hardly produce pretty table chickens.

For cooks we should have a large-bodied Brahma with not heavily-feathered legs, or the first cross between a Coloured Dorking and a Brahma. Three or four or more would live peacefully together if properly managed, and each would most likely take a certain number of ladies under his chaperonage. By always letting the cooks be of different ages and hatched one under the other we have generally noticed that the younger are afraid of the older, and run from them.

Supposing, of course, it would be practicable to hire some farm homestead for the fowls only, we think a fair price might safely be paid for rent, as with personal supervision the results should be good; but great care would have to be taken in looking-up the eggs regularly, for the hens would be sure to lay in mangers, and cribs, and out-of-the-way places where two-legged foxes would always be ready to lay their hands on any stray eggs.

We hope we have not damped "A. B.'s" ardour as a rising poultry farmer in embryo, but we cannot recommend anyone to enclose wire runs for keeping birds for eggs and rearing for table; for as we said, many good and practical people have tried it and found it not to pay.—*W.*

PROFITABLE POULTRY-KEEPING.

In our issue on February 10th Mr. Webb stated his experience under the above title. A correspondent asked for more particulars, and in reply Mr. Webb has obliged us by sending the following details:—

On February 1st, 1875, I began with ten hens and one cock. On February 1st, 1876, I had in stock forty-three fowls. I killed during the twelve months thirty. The average cost of food, &c., has been £1 per month. Indian corn is 16s. 6d. to 18s. 6d. per bag. Tyler's patent poultry meal, 18s. per hundredweight. Price of eggs in January, seven to nine for 1s.; in February, ten for 1s. Fowls fetch 4s. to 4s. 6d. each. My success would have been greater had I not set four hens with Duck's eggs, and reared only seven, which I killed and reckoned above as fowls

Thus I lost much time with four out of ten hens. This month (February) I am certain of four hundred eggs, and I have two hatches of chickens.

DUBBING OF ALL GAME COCKS.

I AM very glad to find that my few words on this subject have called forth two somewhat long letters. If a pond stagnant and foul remains undisturbed it may be doing abundant mischief to those near. But it is not so very offensive. It is an old pond, it is mantled with green, and has a decent look, and people tolerate, or forget, or rather like it; but get it well stirred up, let its hidden nastiness come to the surface, let its vileness taint the air, then people say "Clean it out, clean it out," or "Do away with it." Dubbing is the pond, the press stirs it up, attention is directed to it, and truly thankful am I that the subject has been caught-up, and I hope it will be more and more written against and talked against until the dubbing of all Game fowls for ever ceases. I only mentioned Game Bantams, as they are much liked by ladies, and I know that more ladies would keep them was not dubbing required as a condition of showing with a chance of success. I heartily approve all that "SURREY PARSON" states. He in attacking the Crystal Palace Show simply goes further on the right road than I ventured to do. He would carry by assault, I only attacked by skirmishing.

Another and very different letter appears printed immediately beneath "SURREY PARSON'S," and has the name of "FRTZ" at the end of it. This letter I do not approve. "FRTZ" says I insinuate that the level of Game Bantams is about equal to Black Bantams. I do not think them on the same level at all. Game Bantams are below Black Bantams, just as White Pouters are below the Pied varieties, for this simple reason—they were only recently made. We all remember the time when no such a bird as a Game Bantam existed, whereas Black Bantams, White, and Nankin were in England in the last century. From the last-named Game Bantams were principally made, and I possessed some Duckwings which threw pure Nankins. Then next as to Black Bantams being often "Black Game Bantams with rose, comb, and ears." I, an old Black Bantam breeder, say that this is incorrect. New breeds are made from what before existed, but the reverse is of course not possible. Next about dubbing. I have been familiar with Game fowls from childhood, being the son of one who always kept them.

"FRTZ" seems to object only to cock-fighting because it leads or necessitates gambling. As to that, men will gamble, and have gambled about the race of two raindrops down a window-pane. Gambling is detestable, but cock-fighting is to be specially stamped-out because of its cruelty. "FRTZ" thinks that there is as great cruelty in coursing a hare. The cases are not parallel, and the logic of "FRTZ" is at fault. Hares are killed for food, just as oxen and sheep are. Killing them by the aid of dogs is the oldest kind of hunting. They were so killed before guns or even bows and arrows were dreamed of. But whoever fought cocks for to supply man with food? Then "FRTZ" makes much of the fighting being in the birds, that they want no urging, &c. But who made the Game cock? Who? Why man, not God. When I see the prize bulldogs lying on their benches at a show, with lower jaw so far protruding, so that in the poor dog's case his very tongue cannot be hidden in his mouth, the upper jaw being too short—when I see this villainous aspect of the poor dogs I say to myself, "Man's wickedness made you; not Him who made the shepherd dog for man's use, and the dog in general as man's friend." Man has bred and bred together certain specimens with furious nature and deformed aspect, until by selection he has produced a beast unnaturally savage and unnaturally formed.

So too exactly of the Game cock. For generations, possibly for hundreds of years, the most savage have been selected and bred from until the bird ceases to do what he would naturally do—fight a bit until beaten, and then run away. Man's wickedness made the bulldog and the Game cock, and the fighting to death is in him because put in him by breeding and kept up by stimulating food.

"FRTZ" wonders what I mean by saying, "Once let Game cocks be dubbed and cock-fighting is for ever at an end;" and imagining, I suppose, that I am "a muff" as well as a clergyman, proceeds to say, "If 'WILTSHIRE RECTOR' thinks that by not dubbing Game fowls he will prevent their fighting, he will find he has made a mistake. This is worse than the bread-and-milk theory." It really seems absurd that I should have to explain my words, as everyone save "FRTZ" would know what I meant.

1st. Why have Game cocks been always dubbed? To enhance their beauty? By no means. A cocker had no eye for artistic beauty; he was too low class for that. See how he trims the poor bird, and the fright he makes of him—tail out to a triangle, all the beautiful arch of the feathers gone, hackle cut, saddle ditto. The creature who did and does this (and I have not been in and out of the poultry world for fourteen years without knowing that certain Game breeders now fight their birds on the sly),

had and has no eye to beauty. Was it, then, from kindness the poor bird's wattle and comb were cut off? By no means. The cocker knows no such feeling. Why was it done? Why simply to prolong the battle, for if the cocks were undubbed the most active bird would seize the other by the comb, hold him, and in would go the steel spurs, and the battle be over in a moment. Dubbing was to prolong the sport, and if it be done away no cock-fighting to satisfy the cocker could be had.

Let it be clearly understood that apologies for dubbing are in reality apologies for cock-fighting. Stamp out the one you stamp out the other.

I earnestly hope that if "FRTZ" ever again ventures into print he will have a worthier subject. In conclusion, I call upon all readers of "our Journal" to aid me in putting down this cruel dubbing, in itself cruel and leading to greater cruelty. The Editors of this Journal aim, I know, to help to do away with every iniquity or cheating connected with poultry, and I object to "carving" and "stitching" as well as dubbing; both are cruel, but, unlike dubbing, they do not lead to fighting.—WILTSHIRE RECTOR.

MR. WILLIAM DRING.

THE readers of the poultry portion of the Journal, and the lovers of poultry in general, will be grieved to hear of the death of one who has for many years occupied a foremost place at all the great exhibitions, and who has done as much as any man to improve the breed, in which he was especially interested—the Crève-Cours and Houdans—Mr. Wm. Dring of Faversham. As I have been interested in these same breeds, it was my lot to be brought into frequent contact with him, especially as we were comparatively near neighbours. He was most thoroughly straightforward and upright in all his dealings, ever ready to acknowledge the excellence of the exhibits of his competitors, having no secrets, and always ready to communicate information to others. He was (as all who ever met him knew), most enthusiastic in his pursuit, and with by no means great appliances managed to obtain a prominent place as an exhibitor and breeder. To the poultry shows of his own county he will be a very great loss, and all who had the pleasure of his acquaintance will feel that they will lose one of the pleasantest features in not being able to shake him by the hand and hear his trenchant and sound remarks on the character of the show. He was much respected and valued in the extensive business in which he was employed, for his love for his hobby in no way interfered with the diligent fulfilment of his duties. Would that all who are engaged in the "fancy" had the same upright and honest method of conducting business that our friend had, we should not then hear of so many complaints.—D., Deal.

[We have another tribute to the memory of Mr. Dring, but it is needless to add more than that he died on the 26th of February.]

ALEXANDRA PIGEON SHOW.

THIS was held at Idle on February 26th and 28th, when the following awards were made by the Judge:—

PIGEONS.—ANTWERPS, Long-faced.—Cock—1, H. Jennings, Allerton. 2 and 3, C. Hopwood. vhc. B. Rawnsley, Goldstock, Bingley (2). Long or Medium-faced.—Hen—1 and 2, C. Hopwood. 3, H. Jennings. vhc. J. Cockitt, Great Horton. Short-faced.—Cock—1, Miss E. H. Entwistle, Wyke. vhc. J. S. Collier, Rochdale; T. Bottomley, Great Horton; Miss E. H. Entwistle. Hen.—1 and 2, J. S. Collier. 3, B. Rawnsley. Any variety.—Young.—1, B. Rawnsley. 2, H. Jennings. 3, G. Collins, Great Horton. vhc. A. Brook, Horton; H. M. Pearson, Liverpool. LIEKLIEST BIJD FOR FLYING PURPOSES.—1, B. Rawnsley. 2, H. Jennings. 3, E. Marshall, Yendon. vhc. J. Holden, Wibsey; J. Lister, Keighley; T. H. Stretch, Ormskirk. ENGLISH OWL.—Cock or Hen.—1, J. Thresh, Bradford. 2, W. Ward, Otley. 3, F. Eastwood, Littleborough. vhc. J. Brown, Stoneclough; G. Bolton, Dragon.—Cock or Hen.—1, H. Jennings. 2, S. Wade. 3, W. Ward, Otley. vhc. B. Rawnsley. TURBIT.—Cock or Hen.—1 and 2, B. Rawnsley. 3, J. W. Smith, York. JACOBIN.—Cock or Hen.—1, 2, and 3, T. Holt, Bradford. LONG-FACED TUMBLERS.—1, J. Brown, Stoneclough. 2, B. Rawnsley. 3, J. Cargill, York. vhc. J. B. Winspear, Scarborough. ANY OTHER VARIETY.—1, T. H. Stretch. 2, B. Rawnsley. 3, G. Thickett, Rochdale. vhc. J. Cockitt; B. Rawnsley. SELLING CLASS.—1, B. Rawnsley. 2, T. Holt. 3, H. Jennings. vhc. B. Rawnsley; A. Smith.

JUDGE.—Mr. W. Lund, Shipley.

A GOOD EXAMPLE.—We are informed that all prizes awarded at the Kendal Show were paid on the 22nd of February, that is within ten days after it closed.

APPRECIATION OF LARGE HIVES.

"THAT fellow does not know much about bee-keeping in this cold country, otherwise he would use smaller hives," said some of the Lancashire bee-keepers when they first saw my hives placed amongst theirs on the Cheshire moors. Ten years ago a great writer on bees stated in a respectable gardening periodical that "Mr. Pettigrew's large hives are a delusion and a snare." A great change has taken place in the opinions of enlightened apirians. The logic of facts has ploughed up the fallow ground and destroyed the weeds of prejudice. The most enlightened

and active men of the bar-frame school have been won over to the side of capacious hives for their bees. It appears to me that they will require no more stimulus from our school. They will speedily find that the adoption and use of large hives will put them on the high road to great success in bee-keeping, or in other words to large harvests of honey.

The remarks I ventured to make lately on the proposal to have a standard bar-frame hive have been well read and understood. From a private source I have learned that Mr. Abbott's bar-frames are now 17 inches square by 11 inches deep inside measure, containing 8179 cubic inches of space. I am pleased to know this, for Mr. Abbott holds an influential position among apirians, and his hives and example will be extensively copied. Hives of this size will hold a great many bees and do much work. The size of hives is of greater importance than their shape. Every bee-farmer, on finding that his bees have power and scope to yield large harvests of honey, directs his attention to the most profitable mode of management and the best shape of hives for that mode. The shape of Mr. Abbott's hive is suitable for swarming and supering, but very unsuitable for furnishing the breakfast table with bars of pure virgin honeycomb. From hives of 3000 cubic inches of space much pure honeycomb may be obtained, far more than from smaller hives; but I mean whole bars of honeycomb would be more abundantly obtained from the hives if they were considerably longer than they are broad, but of this more will be said at another time. Meanwhile we would like to encourage all active apirians, whether they keep bees for profit or pleasure, to have hives about the size of Mr. Abbott's, and of any shape they like. In the remarks I have referred to on "a standard bar-frame," and suggested that the size should be 3000 inches at least, but I scratched out the words "at least," lest some should be frightened from going in the right direction. But seeing that the bar-frame school are now in the van as to size of hives, I shall take care not to scratch out these words again.

It is very gratifying to know that the science and art of bee-keeping are making very rapid strides. Testimonies and evidences of this come from all quarters. Application for stocks of bees are coming here thick and fast. Three or four have come within the last few days, and one of these for twenty hives. I mention this as a hopeful sign of the increasing interest that is taken in bee-keeping, and also with a view to let it be known that at present I have no stocks on sale. All I had to sell were disposed of last autumn; indeed, the stocks were reduced in number to two dozen. I had resolved to reduce them to ten hives and keep these simply for experiments, but I have changed my mind, and will again increase the stocks both in number and size. Almost all that apply to me for stocks of bees ask for "the largest hives," and sometimes 20-inch hives are specified. All this is pleasing and encouraging to me, and I mention it to encourage others. Everything indicates advancement and a successful future.

As for honey, I can sell it readily both in the comb and out. I get 1s. and 1s. 8d. per pound for run honey, and 1s. 8d. and 1s. 6d. for honeycomb. I have had greater difficulty this year in selling grapes than honey, and bees are far less costly to keep than vinerias.—A. PETTIGREW.

OUR LETTER BOX.

EGG YOLKS DARK-COLOURED (E—s).—The appearance you mention may arise from different causes. They are not uncommon in the first eggs of a pullet, but the colour of the yolk is then generally very light. In hard-boiled eggs the outer skin of the yolk is always dark. Our opinion is that the colour will disappear by degrees. We advise you to alter your feeding by the substitution of barley meal or ground oats for the morning and evening meals. Slake it with water. Give whole corn for the mid-day meal, and discontinue potatoes entirely. They tend always to induce disease of the liver in fowls.

ARTIFICIAL INCUBATION (J. F.).—We know of no special volume on the subject. There is a relative chapter and drawings in our "Poultry-keeper's Manual."

SILVER-SPANGLED HAMBURGERS (Mrs. Forbes).—We should prefer writing to some prizetakers in the north.

DON RABBITS NOT NEST-MAKERS (A. Perrier).—We have never been losers in the way you describe when our Rabbits were properly lodged and attended to. We like the kindling place to be contrived so that it shall be nearly dark and quite out of sight. When the time is at hand they should be supplied with hay, with which they will make their nests, added the flock from their own coasts. The does as the kindling time comes on should be moderately supplied with green food and have a little water at times. This keeps them free from fever.

HEN CANARY WITH OVERGROWN CLAWS AND BORN FEET (Avis).—Accidents in various forms occur to hen Canaries when their claws or nails are overgrown. Long nails which assume the shape of a sickle prevent birds hopping freely from perch to perch, or from the perches on to the bottom of the cage; in fact, we have known several deaths to occur solely through birds being unable to free themselves from their perches and wires of the cages. In each instance the bird was found suspended head downwards either from the perch or the wire. Birds when their nails or claws are neglected lose much of that sprightliness of action which cheerful birds should possess when in good health. If birds are to be imprisoned for man's pleasure they should be attended to, for it is impossible they (the birds) can keep down an overgrowth of horny substance either in their nails, and sometimes their beaks, when not provided for in the same way as birds are in a natural state of freedom. But it is rarely that Canaries' nails require clipping until they

exceed the age of one year old. Breeders should be careful in examining the claws of all hens before putting them up to breed from. Accidents may be prevented—such for instance as when a hen suddenly starts from her nest and drag with her the nesting material containing eggs or young hatched birds. The claws when long and twisted cannot be so easily freed from the nest as when short, and the eggs or young are frequently injured through the hen endeavouring to extricate or disentangle her claws from the nest. As a natural consequence long claws tend to bring about sore feet, owing to the unnatural twisting and strain upon the joints of the feet. If there be even a slight accumulation of dirt about the feet soak them in lukewarm water and carefully cleanse them. But we imagine your cages to be kept scrupulously clean, for you say "the perches are clean, so that cannot be the fault" of the sore feet. You ask for a remedy; we are pleased to give one. With a sharp penknife or scissors pare off the superfluous portion of the nails, but be very careful not to cut quite close to the red ray or vein which runs about two-thirds up the claws, and which may be seen by holding the bird's feet against a strong light. If, however, you should by accident draw blood, bathe the feet in salt and water. An occasional bathing of the feet in the solution will also tend to effect a cure of the sore feet. If the bird's feet appear very sore, place until healed some moss or soft hay upon the cage bottom.

DISTRICT FOR BEES (W. M. E.).—Anywhere in Kent would be suitable. About Chislehurst we know of good apiries.

METEOROLOGICAL OBSERVATIONS.

CANNON SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1896.	Feb.	Barom. at Sea Level.	Hygrom- eter.		Direction of Wind.	Temp. of Soil at 1 foot	Shade Tem- perature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
We. 23		30.711	47.3	44.8	W.	43.6	50.3	48.8	87.8	40.1		
Th. 24		30.949	87.7	84.5	W.	43.0	49.9	38.4	89.8	29.7		
Fri. 25		30.887	40.6	38.0	S.W.	40.6	47.3	34.9	88.4	33.0		
Sat. 26		30.687	47.0	45.4	W.S.W.	41.6	48.9	40.1	77.8	38.6		
Sun. 27		30.486	47.4	46.5	S.W.	41.8	54.3	43.9	67.8	39.7		
Mo. 28		30.771	47.8	46.4	S.W.	42.7	54.0	41.8	96.8	39.9		
Tu. 29		30.787	51.0	50.0	S.W.	44.7	58.6	46.8	81.4	46.1		
Means		30.785	48.4	48.7		43.8	51.3	40.5	78.9	37.5		

REMARKS.

23rd.—Very bright but rather stormy morning; showery about 2 P.M., and occasional slight showers during the afternoon, and very windy; bright starlight night.
24th.—Very fine morning, but much colder; fine and bright all day, but the night not so bright and clear as the night before.
25th.—Raining more or less nearly all day, and very heavily at night.
26th.—Beautifully fine morning, and till 4 P.M., then showery and stormy at night.
27th.—Rain at 9 A.M., but fine before 11; rain again soon after noon, but fine sunset and bright night.
28th.—Rainy early, but sunny before noon; fine afternoon, but showery.
29th.—Rain commencing between 7 and 8 A.M., and continuing very slightly for three or four hours, but very fine afternoon and evening.
Temperature slightly lower than last week. Rain daily, but occasionally very bright between the showers. Sun max. considerably higher than that of the preceding week.—G. J. SYMONS.

COVENT GARDEN MARKET.—MARCH 1.

The market is beginning to feel the scarcity of best fruits, good samples of late Grapes are realising better prices. Among forced vegetables we are well supplied with Asparagus, Sea-kale, frame Potatoes, and French Beans, all of which are making fair average prices. Trade rather better.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	4	0	0	0	Malberries.....	lb.	0	4	0
Apricots.....	dozen	0	0	0	Neotaries.....	dozen	0	0	0
Cherries.....	lb.	0	0	0	Oranges.....	100	0	0	0
Chestnuts.....	bushel	12	0	0	Peaches.....	dozen	0	0	0
Currants.....	4 sieve	0	0	0	Pears, kitchen.....	dozen	0	0	0
Black.....	do.	0	0	0	dessert.....	dozen	8	0	12
Figs.....	dozen	0	0	0	Pine Apples.....	lb.	1	0	0
Guavas.....	lb.	0	0	0	Pineapples.....	4 sieve	1	0	0
Cob.....	do.	0	0	0	Quinces.....	bushel	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, house.....	lb.	5	0	10	Strawberries.....	lb.	0	0	0
Lemons.....	100	0	0	12	Walnuts.....	bushel	4	0	0
Melons.....	each	0	0	0	ditto.....	100	1	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	4	0	0	Leeks.....	bunch	0	4	0
Asparagus.....	100	6	0	10	Mushrooms.....	pottle	1	0	0
French.....	bushel	18	0	0	Mustard & Cress punnet	0	2	0	0
Beans, Kidney.....	100	1	0	0	Onions.....	bushel	8	0	0
Beet, Red.....	dozen	1	0	0	pickling.....	quart	0	0	0
Broccoli.....	bushel	0	0	0	Parley.....	doz. bunches	2	0	0
Brussels Sprouts.....	4 sieve	2	0	0	Parsnips.....	dozen	0	0	0
Cabbage.....	dozen	1	0	0	Pears.....	quart	0	0	0
Carrots.....	bunch	0	4	0	Potatoes.....	bushel	2	0	0
Capaulons.....	100	1	0	0	Kidney.....	do.	8	0	0
Cauliflower.....	dozen	3	0	0	New.....	lb.	1	0	0
Celery.....	bushel	1	0	0	Radishes.....	doz. bunches	1	0	0
Coleworts.....	doz. bunches	3	0	0	Rhubarb.....	bushel	0	0	0
Courgettes.....	each	0	0	0	Salsify.....	bushel	0	0	0
Endive.....	dozen	1	0	0	Scorzonera.....	bushel	1	0	0
Fennel.....	bunch	0	0	0	Sea-kale.....	basket	1	0	0
Garlic.....	lb.	0	0	0	Shallots.....	lb.	0	0	0
Herbs.....	bunch	0	0	0	Spinach.....	bushel	4	0	0
Horseradish.....	bushel	4	0	0	Tomatoes.....	dozen	0	0	0
Lettuce.....	dozen	8	0	0	Turnips.....	bunch	0	0	0
French Cabbage.....	100	1	0	0	Vegetable Marrows.....	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	MARCH 9—15, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	m.	s.	
9	Th	Royal Society at 8.30 P.M.	49.2	81.1	40.1	6	39	5	53	5	8	6	21	13	10	85	69
10	F	Royal Institution at 8 P.M.	49.6	81.6	40.6	6	36	5	54	6	20	6	24	14	10	19	70
11	S	Royal Botanic Society at 8.45 P.M.	49.1	82.2	40.7	6	34	5	56	7	49	6	44	15	10	8	71
12	SUN	9 SUNDAY IN LENT.	50.4	82.2	41.8	6	23	5	18	9	7	6	55	16	9	47	72
13	M	Royal Geographical Society at 8.30 P.M.	50.4	84.0	42.2	0	30	5	59	10	25	7	7	17	9	30	73
14	Tu	Royal Medical and Chirurgical Society at 8.30 P.M.	50.8	84.4	42.6	8	17	6	1	11	43	7	21	18	9	18	74
15	W	Royal Horticultural Society—Spring Show, and Fruit & Floral Committees.	50.6	88.6	42.1	6	15	6	8	morn.		7	39	19	8	56	75

From observations taken near London during forty-three years, the average day temperature of the week is 50.0°; and its night temperature 32.7°.

THE DAHLIA AND ITS CULTURE.



As the season has now come round again when Dahlia-growers will be turning their attention to the propagation, &c., of that invaluable florist's flower, a few words might not be out of place in connection with the cultivation of the plant which is certainly the queen of the autumn. The Dahlia holds a foremost place in public estimation, as may be witnessed at the autumn shows, where the Dahlia stands invariably come in for a large share of attention and admiration; and looking at the Dahlia from every point of view, whether on the exhibition table, in lines with other subjects, as centres for large beds on grass, in mixed or shrubby borders, or in whatever position it may be placed, its adaptability for such purposes is perfect, and the plants when laden with their symmetrical-formed flowers of almost every shade of colour are always effective.

The roots ought now to be brought out of their winter quarters, and some considerable caution is necessary on their first introduction into heat, more especially if intended to be started in dung beds, than which there is no better place if the heat is not too violent; if so, and full of rank steam, the chances are that many roots will turn soft and decay instead of giving a regular supply of cuttings. If the heat of the bed has declined to 80° or 85° then spread on the surface a slight covering of leaf mould and sand, or any other light material on which to place the roots together, and properly named. When all are placed sprinkle a little of the same material among them, and admit air moderately on every favourable occasion, so that the frame may be kept sweet and dry, when shoots will be sent up in a short time in abundance.

When of 3 inches in length they should be detached from the parent root with a sharp knife, making a clean cut, and be inserted singly in thumb-pots in soil composed of loam, leaf mould, and sand. Very much of the success will depend on the expedition with which the operation is performed, for if the cuttings are allowed once to flag very many of them will rise no more. Water with tepid water, and immediately place in smart bottom heat, when roots will soon be formed. When well rooted the plants should be shifted into rich loamy soil in 4-inch pots well drained. Nothing is more injurious than allowing the plants to remain in the cutting pots until they are potbound. If convenient after this shift give them a slight bottom heat till they are again established, when they should be at once placed in cold frames with plenty of air admitted on all favourable occasions. The object should be now to secure a firm stubby growth, but a strict watch must be kept that frost never reaches them. Towards the end of May the lights must be kept off the plants on all favourable opportunities, so that they may be hardened-off ready for planting the first week of June, which is as early as is consistent with safety in most parts of this country.

Some practise propagation merely by dividing the old roots into as many pieces as there are portions having

eyes, and then potting them in the usual way. I prefer, however, the plants struck as above, believing they give more perfect flowers. Others, again, propagate during summer, taking the side branches and striking them in brisk heat the same as in spring, keeping them in small pots during winter and starting in the usual way in spring, allowing only one shoot to each plant. This is a very safe plan for those who do not succeed well in wintering the old roots.

The preparation of the soil in which the plants are to grow must have particular attention if first-class flowers are expected, and as the Dahlia delights in rich feeding such must be borne in mind when the ground is being prepared. The ground should be trenched in autumn and thrown into ridges, and those who can command decayed turves with plenty of fibre, accompanied with a liberal supply of rich manure, are in possession of the materials that will grow Dahlias to perfection. In April the space for them should be forked over and well broken up again before planting. If for exhibition they are best grown in a square by themselves, and not less than 4 feet apart each way, and in straight lines, the stakes to be placed in position first, and due care taken that the roots are not injured in planting, and that the plants be firmly but not tightly tied to their stakes. When planted each to have a good soaking of water, to be repeated twice a-week if the weather proves dry. Regular syringings on the evenings of hot days will be of great advantage to them. I occasionally use a little soft soap with the water to keep them free from insects. A sharp watch must be kept that thrips does not gain a footing among them, which would utterly destroy the chance of obtaining good blooms.

As soon as the plants are advanced in growth and hot weather sets in I invariably give a heavy surface-dressing of cow manure 3 or 4 inches thick, and line out the alleys between the plants and cover the dung with the soil from the alleys. The leading stem having been kept regularly fastened to the stake, now is the time to add the shoulder stakes, as they are termed in some parts of the country. To each plant four stout stakes are put at convenient distances to support the side shoots to be selected for that purpose, and all others are taken away; and in future all lateral shoots to be thinned-out as well as the flowers, some varieties requiring severer thinning than others, some sorts throwing very rough flowers if over-thinned, while for others thinning is necessary to obtain the flowers of the required size. Due care will also be necessary now to afford the plants abundance of moisture in dry weather, and a good soaking occasionally of liquid manure will be beneficial. To those who may not have access to the drainings from the dunghill I do not know of a better or easier-made liquid for them than guano and soot, which the foliage will bear witness to after the application by the dark hue it will assume.

If for exhibition some means must be used to shade the flowers; and I may here say that I believe many, who have not had much experience, over-shade, which makes the colours washy, and certainly the flowers do not carry so well if they have been subjected to too long

shading. Many devices are used to protect the blooms, the most common of which is, I believe, the garden pot supported on a piece of board. The best shade I have ever used or seen is a round board with a projecting piece with square hole for the stake to pass through, moving upwards and downwards at pleasure, with stiff pasteboard, about 8 inches or so deep, nailed round the circle, and painted white inside; this keeps the flower dry and cool, and protects from the sun's rays, while being open below the blooms obtain a sufficiency of air. A simple and useful mode of protecting the blooms is also shown by the accompanying figures. Fig. 45 (1) represents a piece of pasteboard (old hat-boxes will be quite as good) about 8 inches by 6, less or more. By bringing the two bottom corners together, so as to overlap a little, the pasteboard can be nailed top and bottom to a thin lath of wood, as in (2), which can

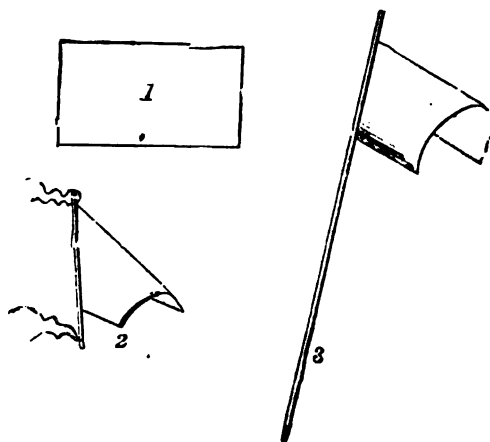


Fig. 45.

be tied at the required height upon a tall flower-stick, which should be squared a little to make it set firm; or it may at once be tacked to the stick as shown in (3). These shades will endure heavy rains if the pasteboard be moderately stiff, and will last several years. They have been used for Tulips, Ranunculuses, Carnations, Roses, Pinks, and Dahlias. A diligent search must at all times be kept up to prevent the ravages of the earwig, the greatest pest the Dahlia-grower has to contend with. Small pots with dry moss, Bean-stalks, or whatever may suggest itself to the grower, must be used and looked over daily. As a further protection against earwigs I have occasionally enveloped the flower stems with wadding; for, notwithstanding that earwigs are winged insects, they do not generally fly from flower to flower, and the wadding greatly impedes their ordinary movements, and preserves valuable blooms.

There is also another class of plants that are most useful to the gardener who has broad borders to plant—I allude to the dwarf Dahlias, of which there are many colours from white to bright scarlet, &c., the plants growing from 18 inches, or less, to 2 feet high, and bear their flowers in the greatest profusion.

After the frost has cut down the plants the next care is to prepare the roots for keeping over winter. Cut the plants down at a few inches above the ground, to which fasten the name of each variety. Dig them carefully up, not breaking the roots, and place in flat baskets roots upwards to dry, so that they can be placed indoors at night, and on damp days; when fairly dried they may be stored away where frost cannot reach them. The most successful way of keeping Dahlia roots I have ever seen is to pack them in dry soil; it keeps the roots from shrivelling, and they come out plump and fresh in spring. Of course they should be looked over occasionally to see that none of them are damping.

Appended are the names of a few new and old varieties that I consider well worth growing.

Show.—Andrew Dodds, Alexander Cramond, Acme of Perfection, Annie Neville, Criterion, Charles Backhouse (rather small but good), Crown Prince, Fanny Purchase, Gipsy King, Golden Drop, H. J. Quilter, Herbert Turner, James Service, James Cocker, Leah, Lord Derby, Mr. Sinclair, Miss Henshaw, Mrs. Boston, Ne Plus Ultra, Paisley Paul, Tom White, Walter Reid, W. Keynes, W. P. Laird, and Willie Austin.

Fancy.—Butterfly, Bessie Wyatt, Carnation, Fanny Sturt, Flossie Williams, Flora Wyatt, Gem (Stafford's), Harlequin, Hero of York, Leopardess, Mrs. Bunn, Mrs. Saunders, Mrs. Joy, and Prince of Wales.—J. B. S.

NOTES FROM MY GARDEN IN 1875.

FLOWERS.—AURICULAS.

AMONG the disappointments of the last season was my Auricula bloom: not that I had a bad one, but it was so uncommonly late that I was unable to have any appreciable number of them in bloom for the show, held in connection with the Botanic Society's Spring Show, of our (I fear almost defunct) Metropolitan Floral Society on April 28th. Indeed, in all my experience of Auricula-growing I never knew so late a season, and I have grown them on and off for forty years. For weeks they seemed almost to stand still, and no amount of coaxing could move them on. I remember a few years ago being twitted by some person who had never grown an Auricula for asserting that the date of a show was fixed too early. Why did I not push them forward as other flowers were treated? But they will not stand the treatment that other flowers pass through. Keeping the frames close and putting the plants into the greenhouse does not seem to influence their opening, and certainly does not improve the plants. I know that various plans are proposed for the purpose, but although I have tried them I never saw that they made any appreciable difference.

I adhered to the same plan of growing them as I did last year—viz., not using so rich a compost for the winter season, and then top-dressing with rich stuff (sheep manure) in the spring, and was very well satisfied with the vigour of my plants and their general healthiness. I see, however, in a contemporary, that a very experienced grower in the north recommends top-dressing with not over-rich stuff, nor so old as some people advise. I always thought that this was a cardinal doctrine amongst Auricula growers, that it could not be very well too old or too rich; but it is evident that there are differences of opinion even in this. We have broke away from all the quackeries and nostrums that used to be recommended for these beautiful plants; but I very much question whether it would be wise to go to the opposite extreme and refrain from using manure at all in top-dressing, as seems to be almost the idea embodied in the article to which I refer. The amazing progress which the plants make when top-dressed might be perhaps attained if plainer compost were used, although I doubt it. However, I may, perhaps, give it a trial this season by treating a few in the manner recommended.

As far as the value of the varieties is concerned I have seen but very little to make me alter my views. There are some seasons when particular varieties come out prominently, as will be the case in all flowers and fruits, while there are some which in all seasons hold their own. And we have to remember that it is not with the Auricula as with other florists' flowers. You do not grow a batch of new plants every year, all of which, with the exception of two or three, you discard a few years afterwards; but you may perhaps get hold of one new one in the course of a year or two which may perhaps be better than flowers that have been sixty or seventy years in cultivation, but it is very doubtful. There has been a good deal of discussion, for instance, in the Journal lately as to the merits of two very old flowers—Page's Champion and Taylor's Glory. Does it not seem strange that these flowers, which were in cultivation before many of us were born, should still hold such a prominent place? Mr. Glenny has been quoted as an authority, although his authority has been repudiated. I should, by-the-by, not have liked to have done so if G. G. had been alive. I should like to quote one whose authority is second to none, my deeply mourned friend the Rev. G. Jeans; and although it was written fifteen years ago and I am referred to, yet I cannot forbear quoting it. After enumerating the varieties in growth he says, "And now to conclude. Where are we to look among them all for the type of a green edge such as we want? I confess I know not. Is not Page's Champion the best we yet possess? 'D.' of Deal thinks it is. 'Q' (the Rev. John Bramhall) says it is, and I am forced to admit that it is; and therefore it is the best, for who in the Auricula world would pit his dictum against such a trio? But this I say, Shame to seedling raisers if it is; but I believe it is notwithstanding." As to Glory, the following in his description in "Gossip for the Garden" for 1860—"The best of Taylor's then, and perhaps of all white-edged Auriculas. Pip a circle, flat; edge pure white; colour light purplish plum,

of good proportion; paste circular, substantial; eye light yellow; anthers hidden. Foliage smooth, handsome, evenly mealed. First-rate trusser." And we have had nothing since then to displace it. Heap's Smiling Beauty was in cultivation then. Moreover, as a general rule it is not so flat as Glory, and there is a dash of grey in the edge which takes away from the perfect whiteness which distinguishes Glory. We hear faint echoes from the north of other flowers which are to beat those we have, but we may at any rate hold our judgment in suspense. I find that George Levick, for instance, which is said by some to beat George Lightbody, has had doubts thrown on its pre-eminence by no less an authority than the Rev. J. Tymons, a first-rate grower.

It is a mystery to me that this lovely flower should have so almost entirely gone out of cultivation in the south, while in the north it still holds its own. There died the other day at Shirley near Southampton one whom I remember well in days long since past—Mr. Ginger—as amongst a coterie of growers of whom John Dickson of Acre Lane, Brixton, was *facile princeps*, and now the fingers of one hand are enough to enumerate all of us in the south of England. I am sure it is a fallacy to suppose that Auriculas are difficult to manage. There are some kinds, doubtless, which are miffy and slow to increase, or else why after sixty years should Booth's Freedom be almost extinct, and Page's Champion, Taylor's Glory, and Leigh's Col. Taylor be so difficult to obtain? But these are exceptions. Such kinds as Waterhouse's Conqueror, Headly's George Lightbody and Charles Edward Brown, Lightbody's Richard Headly, Cheatham's Lancashire Hero, Campbell's Lord Palmerston and Pizarro, Masters' Mrs. Sturrock and Eclipse, and many others are not only not difficult to grow, but readily increase. They require care, no doubt, but so does everything that is to be done well; but they will amply repay all the care that may be bestowed on them. I have digressed a good deal from my own culture in this rambling paper, but love for the flower must be my excuse.—D., Deal.

ROSES.

On page 131 Mr. Camm gives a very melancholy account of own-root Roses, and the time taken to grow them. My experience in growing Roses from cuttings differs very considerably from Mr. Camm's. Before going further I must state that the soil of my garden is a deep sandy loam, and that my latitude is a few miles south of London.

At the end of September or beginning of October the cuttings from ripe wood are carefully prepared, and planted in rows in one of the most open plots in the garden without manure. By the following February it will be found that each cutting has formed a mass of incipient roots round its base. The plants must now be kept from the drying influence of sun and wind by hurdles and mats. Should the young shoots at the top be allowed to flag, the tender roots will be injured and the plants die. They must be frequently watered in dry weather. When well rooted the covers may be removed, but the watering must be kept up.

By adopting the above treatment the majority of my cuttings have made good plants by the following summer, and have afforded an abundance of blooms, and by October they will have made strong shoots, many of them over 8 feet long. In November the best are planted—with a good ball of mould round a mass of fibrous roots—into the Rose beds, and those that would make "weary work" in forming good bushes are consigned to the rubbish heap. Those planted out are severely pruned early in the following spring, and form fine plants during the summer. Some sorts succeed better than others; such hardy kinds as Charles Lefebvre, John Hopper, Victor Verdier, Comtesse d'Oxford, Madame Victor Verdier, &c., seldom fail.

I believe one cause of disappointment is planting the slips in the shade, as recommended by many. To keep them damp and in the shade, in the spring when commencing to throw out their tender roots is necessary, but when the roots are safe a shady corner is the worst possible place for a Rose nursery. It will take a long time to make strong plants in such a position, therefore I consider it much better to plant the slips in a plot selected for its exposure to the sun, and to give water and shade when required. I find that short slips often fail in consequence of their making growth on one side only, and consequently dying on the other.

As to the proper time for putting-in the cuttings there is a great deal in the remarks of "PHILANTHOS," who, in the Journal

for July 29th, 1875, recommends the summer. Immediately after my reading his opinion I went into the garden to give the plan a fair trial, but unfortunately was too late to find many ripe stems that had not thrown out side shoots; however, I found a few, and they were soon cut-up and in the ground, and protected from a scorching sun by cabbage leaves. All these were well rooted by the autumn, and had made short shoots, which remained healthy all the winter, notwithstanding the severe frost. They appear ready for a good start this spring, and I believe will be quite a success. This year I intend to make my slips as soon as the first blossoms are over and before the second growth commences, and if space will be granted in "our Journal" I will report the results.

It will at once be seen that very few cuttings can be obtained in summer compared with those that can be made from the numerous strong shoots ripe in the autumn; but I think that the success of the summer cuttings, and the small amount of trouble they give, will be found to compensate for this deficiency.

The question has been raised as to whether the quality of the blooms from plants on their own roots differ from those grown on the Manetti roots. On this point I should like further information, and hope that the readers of the *Journal of Horticulture* will have the benefit of the experience of those who grow Roses in both ways, and at the same time it will be important to know what soil the plants are grown in. As to the difference in the trouble caused by planting cuttings on the one hand and budding on Manetti stocks on the other, the two processes are not to be compared. A hundred cuttings can be prepared and planted in a very short time, but I am afraid to say how long it takes to bud the same number of Manetti stocks, leaving out the question of raising the stocks.

I once read in a newspaper of a man who for some offence was sentenced to three months hard labour. The man so sentenced, replied: "Thank you, sir, I can do that little job on my head." Now, I suppose it is men with this peculiarity of being able to work in the above-named position who are hired at the nurseries to bud Roses on Manetti stocks. The man has to remain on the surface of the earth while he carefully performs a delicate operation below that surface. I have so budded a few every season for some years past, and I must confess that I do not like it. Yet I must say that I would willingly go through the work and much more for the queen of flowers if the question of quality should be decided in favour of Manettis.—W. G.

A NEW CLASSIFICATION OF APPLES.

BY ROBERT HOGG, LL.D., F.L.S.

I OFFER this system of classification with a consciousness that, like every other which has been proposed, it is not perfect. No system is perfect, and so long as science continues to advance with such rapid steps the founders of systems must change and advance also. It was my wish to have published it in the last edition of my *Fruit Manual*, and the printing of that work was delayed so long in the hope that I should have been able to have done so that I was compelled to go to press with it before I had brought my classification to a state which was satisfactory to myself. I should have preferred postponing the publication of it even now till I had spent more time on the application of its principles, and thereby proved the correctness of my views; but some friends, whose opinion I esteem very highly, urged its publication, and I have consented in the hope that, now it is in the hands of the public, they also will have an opportunity of applying its principles, and thereby assist me in making it more perfect and complete than it is at present.

One of the greatest difficulties pomologists have had to contend with is the want of a classification of the varieties of Apples and Pears by which they can ascertain the names of varieties in the same way as the botanist is enabled to discover the name of a plant when it is unknown to him. Every other kind of fruit has up to the present been arranged according to characters, which are sufficiently distinct and permanent to make the classification of real service; but of the Apple and the Pear there is none which can be worked with any kind of assurance that it will lead to the desired result. It is not that no attempts have been made to form a classification. On the contrary, Dial, Dochnahl, and Lucas have each produced one, each of which is a modification or altered form of the other; but the characters upon which they are based are to my mind too varying and not sufficiently apparent to render them so

useful as could be desired. In my work on the Apple, which was published five and twenty years ago, I gave a kind of classification to assist students in pomology to ascertain the names of the different varieties; but it has never served that purpose. Previous to this I had attempted to apply Diel's system and failed. Ever since that time I have been assiduously observant of every character in the structure of the Apple which I thought served as a basis for a classification, and at last I fixed upon those which I have accepted as the principles of the new system which I am now about to describe.

The characters upon which this system is based are well known, and have been noticed in descriptions of fruit so long ago as by Diel and other German pomologists; but just as the pre-Linnean botanists observed the stamens and pistils in plants, and entertained certain views with regard to their functions without employing them as bases for classification, so has it been with the pomologists who, while aware of the presence of the characters, have hitherto overlooked them as being applicable to classification.

For some years past I have endeavoured to apply the characters I have now adopted. The light I had at first was small and dim, but by repeated application to the subject every recurring fruit season I began to see the foundation of what has now grown up to the structure which I now offer to the world.

My reason for not giving publicity to it before this was that I wished to work it thoroughly before I committed myself to it. To do so I have procured in various years collections of fruits from different parts of the country, from different soils and climates, and also at different seasons of the year, and in every case I was gratified to find that the characters which I observed in each variety of fruit were equally well marked in that variety from whatever district, soil, or climate it came, or at whatever season the examination took place. For instance, Wyken Pippin from Tweedside, from Chiswick, from Sussex, from Worcester, from Somerset, and from Devon invariably presented the same characters of eye open, seed-cells closed, calyx-tube conical, and stamens median. This I merely give as an example, and it is applicable in every case.

I must remark, however, that in this as in every other classification of natural objects the characters are not always constant, and there are varieties which refuse to submit to any scheme of man's devising. Nature refuses to be bound, and we must adapt our ideas to her laws. In every system it is so, as the botanist well knows; when he would class plants into those which are hypogynous, perigynous, and epigynous, he finds there are some that reject his interference and assert a double alliance. And so it is with fruits. There are those in which some varieties have the eye open or partially closed, seed-cells of the same character, calyx-tubes in which it is difficult to determine whether they are conical or funnel-shaped, and stamens which waver between a marginal and median position, or a median and a basal. But these are difficulties which are easily got over, as I shall show further on.

The characters which I have adopted as the basis of this classification are the eye, the seed-cells, the calyx-tube, and the stamens. These supply the primary and most important divisions; but they may be extended and broken up into fruit round, roundish, or oblate, and fruit conical, oblong, or ovate, and these for convenience may be farther divided into pale, coloured, and russet. I will now treat of the leading characters.

1. *The Eye*.—This is the pomological term used to signify what botanists call the sepals or limb, and mouth of the calyx. In French it is called *cil*.

If we examine a great number of varieties of Apples we find that in some the eye is wide open, and the segments quite re-

Pippin, and Court of Wick; and it is illustrated in the annexed fig. 48. In many cases the segments are erect and spreading or reflexed at the tips, and this form of structure also leaves the eye open though not so much so as in the previous examples. This form is shown in fig. 46. Between the spreading and the erect open eye there are many gradations which will be remarked by any observer who examines the different varieties.

The other form is the *closed eye*, fig. 47. It will be observed in this case that the segments are erect and connivent at the tips, forming a small cone. In some cases of this form of closed eye the tips are spreading; but there is another very distinct form of the closed eye in which the segments are quite flat and convergent, closing in the eye like a trap door in five divisions, as is seen in Trumpington. These two characters of *EYE OPEN* and *EYE CLOSED* I propose to employ as my primary divisions.

2. *The Seed-cells*.—These constitute what is popularly called the core of the Apple, and contain the seeds or pips. They are usually five, but they vary in number, and are occasionally

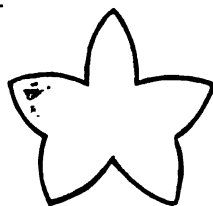


Fig. 49.

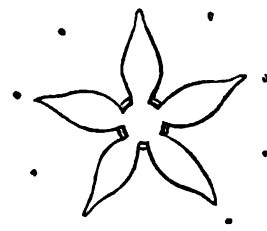


Fig. 50.

three, four, and even six. They differ very much in structure, and are either open to the axis of the fruit or closed; and between the closed and the wide-open cells there are as many gradations as in the closed and open eye. Fig. 51 represents perfectly closed cells; fig. 50 those that are open, and fig. 49 those that are wide open. In the last all the Codlins are to be found, and varieties having the Codlin character.

The Seed-cells form the second great divisions of my system, which are distinguished as *CELLS OPEN* and *CELLS CLOSED*.

3. *The Calyx-tube*.—In making a longitudinal section of an Apple in a line through the centre of the eye to the stalk a more or less deep cavity will be observed under the segments

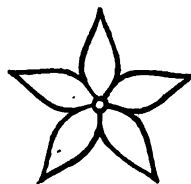


Fig. 51.

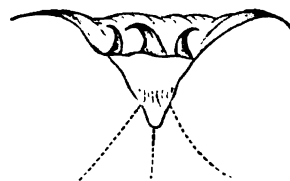


Fig. 52.

of the eye and between them and the core. This is called the *Calyx-tube*, or *Kelchröhre* of the Germans. It is of very varied form, but all of these are modifications of two, or perhaps three, which may be regarded as distinct, and these I have called the *conical* and the *funnel-shaped*. As in the cases of the open and the closed eye and the open and closed cells these run into one another, and there are instances in which



Fig. 46.

Fig. 47.

Fig. 48.

flexed, in some cases so much so as to be quite flat on the surface of the fruit. This is very apparent in Blenheim Pippin, Wyken



Fig. 53.



Fig. 54.

it is difficult to distinguish to which of them the individual belongs. Figs. 52, 53, 54, 55, 56, and 57 are illustrations of the conical tube, some being wide and deep and others narrow and short. Figs. 58, 59, 60, 61, and 62 represent the various

forms of the funnel-shaped tube. The third form is the cup-shaped, which very rarely occurs, and is a short shallow variety of fig. 55.



Fig. 55.

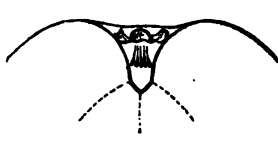


Fig. 56.

The Calyx-tube is the character on which the third division is based, and is divided into CALYX-TUBE CONICAL and CALYX-TUBE FUNNEL-SHAPED.

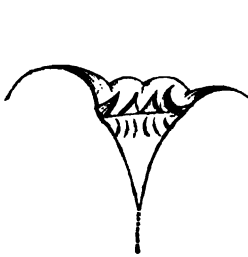


Fig. 57.

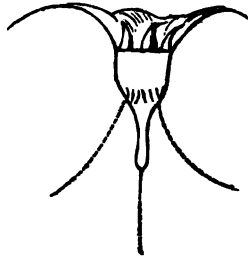


Fig. 58.

4. The Stamens.—These are the little bristle-like bodies which are found forming a fringe round the inner surface of

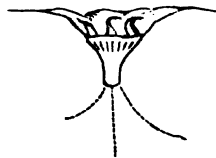


Fig. 59.



Fig. 60.

the calyx-tube, and it is on the position they occupy that the fourth character of this system is founded. On examining a number of different varieties of Apples it will be seen that the stamens are not always in the same position. Some will form a fringe immediately under or near the base of the segments, as represented in figs. 59, 57, 59, and 60, and these I call *marginal*. Others occupy a midway position between the margin and the base, as in figs. 55, 56, 58, and 62, and these are called *median*; and a third are situated near the base, as in figs. 52, 54, and 61, which are termed *basal*.

Taking the position of the stamens as my fourth great division we have—1, STAMENS MARGINAL; 2, STAMENS MEDIAN; and 3, STAMENS BASAL.

To prolong the subdivisions even beyond this point to which we have arrived, we can have—1, Calyx-tube short conical, as in fig. 53, and deep conical as in fig. 52. Then we can have short funnel-shaped, as in fig. 62, and long funnel-shaped as in fig. 58. These may again be further divided into—1, Fruit round, roundish, or oblate; and 2, Fruit conical, oblong, or ovate.



Fig. 61.



Fig. 62.

I have already called attention to the changeableness of the characters in some varieties; how in the cases of the eye and the cells some exhibit them open or closed, or intermediate between the two; also in the interchangeable form of the calyx-tube and the positions of the stamens. In the following classification I have provided against any confusion arising from this cause, and have given additional references when a variety is to be found in more than one division. For example, in Scarlet Nonpareil the eye is sometimes open and sometimes

closed, though the calyx-tube is always short funnel-shaped, and the stamens marginal. This variety is therefore placed in Class 1, section two (§§), and division one (†); but to provide for the case of the eye being closed, it is entered thus—“Scarlet Nonpareil iii., §§, †,” showing that it is also found in Class iii., section 2, and division 1.

It is important that perfect specimens of fruit be used when the classification is applied, and especially that the eyes be perfect; and to observe the calyx-tube correctly the longitudinal section should be made directly through the centre.

CLASSIFICATION OF APPLES.

Class I.—EYE OPEN (figs. 46 and 48). CELLS OPEN (figs. 49 and 50).

§ CALYX-TUBE CONICAL.

† Stamens marginal (figs. 53 and 57).

‡ Tube short (fig. 53).
* Fruit round, roundish, or oblate.

Leyden Pippin
Burr Knot, i. §§ †
Martin Nonpareil
Allen's Everlasting, iii. § †
‡ Tube deep (fig. 57).
* Fruit round, roundish, or oblate.

Winter Hawthornden, iii. § †
Reinette Blanche d'Espagne

No Core
Haffner's Gold Reinette

Uellner's Gold Reinette, ii. § †
Allen's Everlasting, iii. § †

Calville Blanche, iii. § †, iii. §§ †
Rymer, i. §§ †

** Fruit conical, oblong, or ovate.

Tower of Glammis, i. §§ †, iii. § †

Nelson Codlin, iii. § †, iii. §§ †

†† Stamens median
‡ Tube short (fig. 56).

* Fruit round, roundish, or oblate.

Blenheim Pippin, i. §§ †, ii. §§ †

Waltham Abbey Seedling
Stamford Pippin

Rymer, i. § †
Royal Russet, iii. § †, iv. § †

Gogar Pippin
** Fruit conical, oblong, or ovate.

Loan's Pearmain
Adams' Pearmain, i. § ††

Royal Pearmain
‡ Tube deep.

* Fruit round, roundish, or oblate.

Baron Ward, i. §§ †, iii. §§ †

Newtown Spitzenberg
Ornament de la Table

Reinette de Canada, i. § ††, iii. § ††

Kerry Pippin
Embroidered Pippin

Ringer
** Fruit conical, oblong, or ovate.

Grange's Pearmain
Emperor Alexander, i. § ††, i. §§ †

Betsey
Cox's Pomona, ii. § ††

Lewis' Incomparable
Catshead

Lord Grosvenor, iii. § ††
†† Stamens basal (fig. 52).

* Fruit round, roundish, or oblate.

Hambledon Deux Ans

Ribston Pippin, iv. §§ ††, ii. §§ ††

Franklin's Golden Pippin
Devonshire Buckland

Rymer, i. § ††
Lord Derby

Cellini, i. §§ †††, ii. §§ ††
Striped Beefing

Tom Putt, i. §§ †††
Mère de Ménage, iii. § †††

Reinette de Canada, i. § ††, iii. § †††

** Fruit conical, oblong, or ovate.

Emperor Alexander, i. § ††, i. §§ ††

Shepherd's Fame
Adams' Pearmain, i. § ††

§§ CALYX-TUBE FUNNEL-SHAPED.

† Stamens marginal.
‡ Tube short (fig. 59).

* Fruit round, roundish, or oblate.

Scarlet Nonpareil, ii. §§ †
Hughes' Golden Pippin

Sereveton Golden Pippin, ii. §§ †

Brickley Seedling, ii. §§ †
Bringewood Pippin

Golden Reinette, i. § ††
Giddins' Golden Ball

Golden Nonpareil
Burr Knot, i. § †

Greenwood Russet
London Pippin, iii. § †, iii. §§ †

** Fruit conical, oblong, or ovate.

Beachamwell, ii. §§ †
Lamb Abbey Pearmain, ii. §§ ††

White Paradise
Tulip

‡ Tube long (fig. 60).
* Fruit round, roundish, or oblate.

Northern Sweet
Alfriston

Gravenstein
Fearn's Pippin

Royal Somerset
Stamford Pippin, i. § ††, iii. §§ †

Golden Noble, iii. §§ †
** Fruit conical, oblong, or ovate.

Hubbard's Pearmain, i. §§ ††, iii. §§ †

Cockle's Pippin, iii. §§ †
Tower of Glammis, i. § †, iii. § †

†† Stamens median.
‡ Tube short (fig. 62).

* Fruit round, roundish, or oblate.

Cox's Orange Pippin, iii. §§ ††

Wormsley Pippin
Small's Admirable
Cobham
Blenheim Pippin, i. § ++, ii. §§ ++
Golden Reinette
Golden Pippin, ii. §§ +, ii. §§ ++
Yellow Ingestrie
Reinette Diel, ii. §§ ++
Pine Golden Pippin
Duke of Gloucester
Prince of Wales
Baron Ward, i. § ++, iii. §§ ++
Malakovna
Giddins' Masterpiece
Marble Pippin
Buffcoat
Birmingham Pippin
Lemon Pippin
Minchall Crab
Townsend's Smiling Beauty
** Fruit conical, oblong, or ovate.

Golden Winter Pearmain, i. §§ ++
Hubbard's Pearmain, i. §§ +, iii. §§ ++
Claygate Pearmain, ii. §§ ++
Mannington's Pearmain, iii. §§ ++
Scarlet Pearmain
Sussex Pearmain, ii. §§ ++, iv. §§ ++
Brookes'
Rosemary Russet

Class II.—EYE OPEN (figs. 46 and 48). CELLS CLOSED (fig. 51).

§ CALYX-TUBE CONICAL.
† Stamens marginal (fig. 58).

* Fruit round, roundish, or oblate.

Uellner's Gold Reinette, i. § +
Keddleston Pippin, ii. §§ +
Christie's Pippin
Sops in Wine
Brabant Bellefleur
Wadhurst Pippin
†† Stamens median.
† Fruit round, roundish, or oblate.

Wyken Pippin
Court Pendu Plat, ii. §§ ++
Morris' Russet, ii. §§ ++
Burchardt's Reinette
Newtown Pippin

** Fruit conical or ovate.

Golden Pearmain
Cor's Pomona, i. § ++
†† Stamens basal.
None.

§§ CALYX-TUBE FUNNEL-SHAPED.

† Stamens marginal.
† Tube short (fig. 59).

* Fruit round, roundish, or oblate.

Old Nonpareil, iv. §§ +
Scarlet Nonpareil, i. §§ +
Flat Nonpareil
Early Nonpareil
Court of Wick
Golden Pippin, i. §§ ++, ii. §§ ++
Screveton Golden Pippin, i. §§ ++
Keddleston Pippin, ii. § +
Pennington's Seedling
Powell's Russet
Bedleaf Russet, ii. §§ ++
** Fruit conical, oblong, or ovate.

Ooe's Golden Drop
†† Tube deep.

Isleworth Crab
Emperor Alexander, i. § ++, i. § ++
†† Stamens basal.
† Tube short (fig. 61).
* Fruit round, roundish, or oblate.

Dumelow's Seedling
Cellini, i. § ++, ii. §§ ++
Federal Pearmain
Baxter's Pearmain, ii. §§ ++, iii. §§ ++
Reinette Van Mons, iii. §§ ++
Bed Ingestrie
Bringewood Pippin, i. §§ +
Giddins' Favourite
Giddins' No. 5
Tom Putt, i. § ++
** Fruit conical, oblong, or ovate.

Golden Winter Pearmain, i. §§ ++
†† Tube deep.

Winter Oodlin
§§§ CALYX-TUBE CUP-SHAPED.

† Stamens marginal.
None.

†† Stamens median.
Pomme Poire
Ronalds' Gooseberry Pippin
† Stamens basal.
None.

* Fruit round, roundish, or oblate.

Brickley Seedling
Morris' Court of Wick
Queen of the Pippins
Lee's Golden Russet
Byson Wood Russet
Ridding's Nonpareil

** Fruit conical, oblong, or ovate.

Beachamwell, i. §§ +
Goodyear Pippin
Old King of the Pippins, ii. §§ ++
†† Stamens median.
† Tube short (fig. 62).

* Fruit round, roundish, or oblate.

Golden Pippin, i. §§ ++, ii. §§ ++
Downton Pippin
Holbert's Victoria
Pitaston Golden Pippin
Cluster Golden Pippin
Golden Harvey
Robinson's Pippin
Fish's Pippin
Blenheim Pippin, i. § ++, i. §§ ++

Court Pendu Plat, ii. §§ ++
Cellini, i. § ++, i. §§ ++
Formosa Nonpareil
Braddick's Nonpareil
Reinette Diel, i. §§ ++
Ribston Pippin, i. § ++, iv. §§ ++

Lamb Abbey Pearmain, i. §§ ++
Princess Royal
Redleaf Russet, ii. §§ +
Morris' Nonpareil Russet
Guernsey Pippin
Boston Russet
Morris' Russet, ii. § ++
Lemon Pippin, iv. §§ ++
Melon, iii. §§ ++, iv. §§ ++
Fairy, iv. § ++

** Fruit conical, oblong, or ovate.

Herefordshire Pearmain
Barcelona Pearmain
Claygate Pearmain, i. §§ ++
Sussex Pearmain, i. §§ ++, iv. §§ ++
Old King of the Pippins, ii. §§ ++
Golden Russet, iv. §§ ++
†† Tube long.
None.

†† Stamens basal.
† Tube short (fig. 61).

Class III.—EYE CLOSED (fig. 47). CELLS OPEN (figs. 49 and 50).

§ CALYX-TUBE CONICAL.
† Stamens marginal (fig. 58).

* Fruit round, roundish, or oblate.

Ashmead's Kernel, iii. §§ +
Pitaston Russet Nonpareil
Sweeny Nonpareil
Reinette de Caux
Grosse Caseler Reinette
Maiden's Blush
Greenup's Pippin
Hawthornden, iii. § ++
Winter Hawthornden, i. § +
Kentish Fillbasket
Allen's Everlasting, i. § +
Calville Blanche, i. § +
Rhode Island Greening
Giddins' No. 1
Old Middlemas
Rymer, i. § ++, iii. § ++
Pomme de Neige
London Pippin, i. §§ ++, iii. §§ ++
Winter Greening, iii. §§ ++, iv. § +, iv. §§ ++, iv. §§ ++
** Fruit conical, oblong, or ovate.

Cornish Gilliflower, i. § ++, iii. §§ ++, iv. §§ ++
Amassia
Ord's
Ganges
Melrose
Dutch Codlin
Warner's King
Nelson's Glory

†† Stamens median (fig. 56).

* Fruit round, roundish, or oblate.

Hawthornden, iii. § +
Calville Blanche, i. § +, iii. § +
Pommier de Paradis
Royal Russet, i. § ++, iv. § ++
D'Arcy Spice, iii. § ++, iv. § ++
Rushock Pearmain, iii. §§ ++
Flander's Pippin
Thompson's Seedling
Norfolk Beefing, iii. §§ ++
Norfolk Bearer

** Fruit conical, oblong, or ovate.

Tower of Glammis, i. § +, i. §§ ++
Lord Suffield
Sugar Loaf Pippin
Nelson Codlin, i. § +, iii. §§ ++
Nelson's Glory, iii. § +
Royal Codlin
St. Sauveur
Lord Grosvenor, i. § ++
Beauty of Kent
Baldwin
Hunthouse
Winter Marigold
Flower of Herts

* Fruit round, roundish, or oblate.

Baxter's Pearmain, i. §§ ++, iii. §§ ++
†† Tube long.
None.

§§§ CALYX-TUBE CUP-SHAPED.

† Stamens marginal.
None.

†† Stamens median.
None.

†† Stamens basal.

Melcombe Russet

Winter Quoining

†† Stamens basal (figs. 52 and 54).

* Fruit round, roundish, or oblate.

Breitling
Mère de Ménage, i. § ++
Reinette de Canada, i. § ++
Ecklinville Seedling, iv. § ++
Winter Colman
Rymer, iii. § +, i. § ++
D'Arcy Spice, iii. § ++, iv. § ++

Mela Carlo
Sack and Sugar
Wanstall

Russian Apple

** Fruit conical, oblong, or ovate.

Pomme Royale
Warner's King, iii. § +, iii. §§ +

§§ CALYX-TUBE FUNNEL-SHAPED.

† Stamens marginal.
† Tube short (fig. 59).

* Fruit round, roundish, or oblate.

Ashmead's Kernel, iii. § +
Brownlee's Russet, iv. § ++
Greenwood Russet
Orange Pippin
Haggerstone Pippin
Seigende Reinette
Brenchley Pippin

** Fruit conical, oblong, or ovate.

Lucombe's Pine Apple

Belle et Bonne
Warner's King, iii. § +, iii. §§ ++

†† Tube deep (fig. 60).

* Fruit round, roundish, or oblate.

Early Harvest
Lucombe's Seedling
Squire's Pippin
Cambusethan Pippin
Reinette Baumann
Nonesuch
Devonshire Queen
Stamford Pippin, i. § ++, i. §§ ++
Golden Noble, i. §§ +

Surrey Flat Cap
Giddins' Lady Sandwich
Northern Greening
London Pippin, i. § +, iii. § ++
Winter Majetin, iv. §§ +
** Fruit conical, oblong, or ovate.

Winter Quoining, iii. § ++
Cockle's Pippin, i. §§ +

Keswick Codlin
French Codlin
Lincoln Codlin
Manx Codlin

John Gidley Pearmain
Worcester Pearmain
Prinzen Appel
Iron Pin

†† Stamens median.
† Tube short (fig. 62).

* Fruit round, roundish, or oblate.

Cox's Orange Pippin, i. §§ ††
Lodgemore Nonpareil
Pearson's Plate
Cornish Aromatic, iv. §§ ††
Round Winter Nonesuch
Edinburgh Cluster
Baron Ward, i. § ††, i. §§ ††
Melon, ii. §§ ††, iv. §§ ††
Potts' Seedling.
Norfolk Beefing, iii. § ††

** Fruit conical, oblong, or ovate.

Mannington's Pearmain, i. §§ ††

Rosemary Russet, i. §§ ††
Pitaston Pine Apple, iv. §§ ††

Lecombe's Pine Apple
Hubbard's Pearmain, i. §§ ††, i. §§ ††

Cornish Gilliflower, i. § ††, ii. § ††, iv. §§ ††

Grey Leadington
Bess Pool, iii. §§ †††

Class IV.—EYE CLOSED (fig. 47), CELLS CLOSED (fig. 51).

§ CALYX-TUBE CONICAL.
† Stamens marginal (figs. 58 and 57).

* Fruit round, roundish, or oblate.

St. Edmund's Pippin
New Rock Pippin

Sturmer Pippin, iv. §§ ††
Lord Burghley, iv. § ††

Dutch Mignonne
Royal Reinette, iv. §§ ††

Winter Greening, iii. § †, iii. §§ ††, iv. § ††, iv. §§ ††, iv. §§ ††

Api
** Fruit conical, oblong, or ovate.

Edmund Jupp
Carnation

Small's Admirable, iv. §§ ††
Old Leathercoat

†† Stamens median.
† Tube short (figs. 55 and 56).

* Fruit round, roundish, or oblate.

Irish Peach, iv. §§ ††
Winter Greening, iii. § †, iii. §§ ††, iv. § ††, iv. §§ ††, iv. §§ ††

** Fruit conical, oblong, or ovate.

Margil, iv. §§ ††
†† Tube deep.

* Fruit round, roundish, or oblate.

Lord Burghley, iv. § ††
White Nonpareil

Capuziner Reinette
North End Pippin

Bascombe Mystery
Black Crab

Fairy, ii. §§ ††
Ecklinville Seedling, iii. § †††

Royal Russet, i. § ††, iii. §§ ††
Brownlee's Russet, iii. §§ ††

Miller's Glory
††† Stamens basal (figs. 52 and 54)

Dean's Codlin
Nelson Codlin, i. § †, iii. § ††
Springrove Codlin

†† Tube deep (fig. 58).
* Fruit round, roundish, or oblate.

Shepherd's Newington
Betty Geeson

Rostocker
Reinette Van Mons, i. §§ †††, iii. §§ †††

Red Astrachan
Domino

Winter Greening, iii. § †, iv. § †, iv. § ††, iv. §§ ††

** Fruit conical, oblong, or ovate.

July Pippin
Cumberland Favourite

††† Stamens basal (fig. 61).
* Fruit round or oblate.

Reinette Van Mons, i. §§ †††, iii. §§ †††

Pennock
** Fruit conical, oblong, or ovate.

Lane's Prince Albert
Baxter's Pearmain, i. §§ †††, ii. §§ †††

Bess Pool, iii. §§ ††

Rivers' Nonesuch
D'Arcy Spice, iii. § ††, iii. § †††

Duke of Bedford
Ostrogotha

§§ CALYX-TUBE FUNNEL-SHAPED.

† Stamens marginal.
† Tube short (fig. 59).

* Fruit round, roundish, or oblate.

Old Nonpareil, ii. §§ ††
Starmer Pippin, iv. § †

Ile of Wight Pippin
Knight's Lemon Pippin

Devonshire Quarrenden
Annat Scarlet

** Fruit conical, oblong, or ovate.

White Astrachan
Pitaston Pine Apple, iii. §§ ††

†† Tube deep (fig. 60).
* Fruit round, roundish, or oblate.

Hoary Morning
Royal Reinette, iv. § †

Hunt's Green Newtown Pippin
Pennington's Seedling, ii. §§ ††

Winter Greening, iii. § †, iii. §§ ††, iv. § ††, iv. §§ ††, iv. §§ ††

Winter Majetin, iii. §§ ††
** Fruit conical, oblong, or ovate.

Small's Admirable, iv. § ††
†† Stamens median.

† Tube short (fig. 62).
* Fruit round, roundish, or oblate.

Wheeler's Russet
Reinette Grise

Dundee
Cornish Aromatic, iii. §§ ††

Charlemagne
Irish Peach, iv. § ††

Early Julian
Melon, ii. §§, iii. †† §§ ††

Rhode Island Greening
Winter Greening, iii. § †, iii. §§ ††, iv. § †, iv. § ††, iv. §§ ††
** Fruit conical, oblong, or ovate.

Margaret
Haymaker

Cornish Gilliflower, i. § ††, iii. § †, iii. §§ ††

Sussex Pearmain, i. §§ ††, ii. §§ ††

Cockpit
Golden Russet, ii. §§ ††

Lemon Pippin, ii. §§ ††
†† Tube deep (fig. 58).

* Fruit round, roundish, or oblate.

Ribston Pippin, i. § †††, ii. §§ ††

Nonesuch Park
Red Astrachan
Green Fulwood
** Fruit conical, oblong, or ovate.

Leicester Burton Pippin
Margil, iv. § ††

†† Stamens basal (fig. 61).
Duchess of Oldenburg.

§§§ CALYX-TUBE CUP-SHAPED.

† Stamens marginal.
Vale Mascall Pearmain

†† Stamens median.
None.

††† Stamens basal.
None.

ROSES ON THEIR OWN ROOTS.

MR. CAMM has spoken disparagingly of Roses growing on their own roots, and, moreover, when they are required for pot culture. I write not as a rosarian but as a gardener, and I am not willing that Mr. Camm's opinion should carry undue weight. I do not grow Roses for exhibition, but I have grown them for many years for home enjoyment. I have grown them in pots and out of pots, on Briars, on Manettis, and on their own roots. A few varieties of Roses do not strike freely from cuttings, but most of the Hybrid Perpetuals do so readily, and they also grow luxuriantly.

For cultivation in pots I prefer Roses on their own roots. I have never cut such fine blooms of John Hopper as from plants which had been raised from cuttings. The colour is deeper and the perfume more powerful than on budded plants. That fine old forcing pot Rose Baronne Prévost is larger, brighter, and infinitely sweeter when grown on its own roots than when nurtured by any foster-parent. Another sweet Rose—yes, the sweetest Rose of all—the old Provence Cabbage, is deprived alike of its agreeable form and delightful odour by being budded on either the Briar or the Manetti, and especially the former. Général Jacqueminot is more glowing in colour from cuttings than when budded on other stocks. Bessie Johnson is decidedly sweeter when she forages for herself than by trusting to any dog to bring her a bone. Charles Lefebvre, Alfred Colomb, Baronne de Rothschild, Marguerite de St. Amand, Marie Baumann, Madame Eugénie Verdier, Madame Charles Wood, and other sterling sorts I have grown from cuttings in the most satisfactory manner.

I am positive that many Roses are sweeter when grown on their own roots than when worked on any stocks, and the colours are also brighter. I should like to try Mr. Turner's new Rose, the Rev. J. B. M. Camm, on its own roots; it is deliciously perfumed. I shall not hastily mount this Rose on stilts lest it should lose influence. I rather fear its prototype will also lose influence if he mounts Briars to denounce humble, useful, own-root Roses, and especially when the plants are required for growing in pots and for forcing. On the matter of producing high-class exhibition blooms I bow submissively to Mr. Camm, but for forcing Roses in pots I have a suspicion that our friend has yet something to learn.—A NORTHERN GARDENER.

APPLES AND APPLE TREES.

OF late something has been said in our Journal about Apple trees. If "YORKSHIRE GREENING" could furnish us with any information respecting an Apple called Yorkshire Robin, a noted but no doubt a local Apple, which was much prized many years ago, I for one would esteem it a favour, as I fear some of our old favourites are becoming things of the past. I am able to give a better account of our useful old friend the Hawthornden Apple than your correspondents. I have at the present time in use as fine examples of the above Apple as need be seen, entirely free from scab, and to all appearance likely to keep for some time to come. We have here two kinds of soil, one a light loam resting on a gravelly subsoil, and in it has been growing for the last fifty or more years a Hawthornden Apple tree always kept as a bush, so that there is nothing very new about bush-fruit culture. The tree takes up very little room, is in good health, and free from canker as near as can be, and brings us a crop of fine fruit annually. I

do not think it has ever been disturbed at the root since it was planted. It is pruned and dug about yearly, and to all appearance it is likely to go on for many years to come. I cannot say what stock it is worked on.

The other soil is a strong tenacious loam resting on a clay subsoil, and in an orchard are planted two Hawthornden Apple trees of about fifteen years' growth from the graft on the Crab stock. They are in the pyramid form, giving us abundant crops of fine fruit, in the best of health and quite free from canker. They are planted in grass and have not been disturbed since they were planted, receiving a little manure occasionally to help the grass as well as the trees. They are regularly pruned, and to all appearance likely to do us good service for some time to come. Many Apples may be substituted for our old friend, but I find it a very useful kind.

I said in our Journal some time ago that fruit trees ought to be as numerous as Thorn bushes, and Apple trees should have a first place, being of the most useful of hardy fruits. There is no difficulty with careful selection and a little trouble in having them for use the year round.—M. H., *Campbell, Bedale, Yorkshire.*

SWEET-SCENTED FLOWERS.

AMONGST the many advances of the present day there is one which cannot have escaped notice, and that is here seems the greatest possible freedom offered for people finding fault with each other or with existing things. Old notions or customs are attacked on every side; sometimes, however, the attack is to their advantage, as their good qualities come out all the brighter through the ordeal. It is the fashion now in a great measure to ignore practice in favour of what is termed philosophical principles. Many things threaten to be turned upside down; but there is one subject, and that too in a branch which critics have not turned their attention to yet, or but to a slight extent, and yet it is one not to be disregarded in the economy of the world. The subject relates to one of the most refined branches of horticulture, and one more especially under the patronage of our lady friends, that it may appear bold in my attacking a department so likely to be ably defended. The matter that I wish to make further inquiry upon is this: Are all scented flowers hurtful to health, and how many are there that are sweet-scented?

Perhaps it will be well to take the last part of the question first. Some, among whom I class myself, would limit really sweet-scented flowers to a mere fraction of the number which are generally classed in that category. At the time I write the Hyacinth is fashionable. What is the general opinion of this plant? Can its flowers be called agreeably scented or the reverse? A mere single sniff is not sufficient to form an opinion, as the sense of smell is likely to be governed by the pleasure which the appearance of the flower imparts to the eye. I would submit scented flowers to some blind person, as one likely to give an honest verdict. We go on to other plants and ask the question, Are such flowers as Stocks, Pinks, the Hawthorn, Carnations, and sundry other of the Dianthus family "sweet-scented," or are they merely "smelling?" I confess being of opinion that the last-mentioned term is all they deserve, but I may be fastidious. Then we have *Ageratum mexicanum*, French Marigolds, Poppies, *Humea elegans*, Heliotropes, and some others that are highly offensive, at least I think so. Neither can that most powerful-scented of ordinary shrubs, the *Daphne Laureola*, be called sweet, still less so the Privets and Syringas; they are powerful in the scent given off, but not sweet. I hardly know what opinion to give on the Wallflower and Cowslip, perhaps a neutral one; but the Primrose has a higher claim to be regarded as sweet, and Violets, Mignonette, Mint, and *Aloysia citridora* cannot well be found fault with. To these may be added a sprig of Lemon Thyme, but I fear all other ordinary garden herbs must be rejected. Of course it would be treason to say anything against the Rose, and let it be fairly understood that as a scented flower I am willing to place it first, with Violets and Mignonette close to it; and if any two of these were present I do not think any more scented flowers are wanted. If, however, there be no sweet-scented flowers to be had, a sprig of the sweet-scented *Aloysia* is very telling, and mixed with Dahlias in a stand perfume is added to beauty.

I am not sure that a great number of scented flowers are advisable anywhere excepting in the open air, where many of them give off the most agreeable perfume. Wallflowers are most agreeable after a slight shower, and the same may be

said of Stocks, and the scent of a Gorse-covered common when in bloom is not offensive; but a large breadth of the common Privet or Syringa emits an oppressive perfume. Nothing adds more to an agreeable country walk in spring than the scent given off by Violets on a sunny day; and a neat little nosegay of Violets and Primroses, with a few leaves of both as an edging, is a bouquet fit for a queen. I fear that I have made a bold onslaught on what is often regarded as choice and precious, in refusing to acknowledge certain plants sweet-scented that catalogues tell us are so.

Might I now ask some one to give us a chapter on the other department—namely, Are all scented flowers hurtful to health, and to what extent are they so? I should not expect that while flowers are in the open air any harm whatever can be done; but highly-scented flowers when confined to a room must vitiate the atmosphere of that room. In thus calling attention to scented flowers I wish to suggest that many which now claim to occupy that position have no claim to sweetness at all, and that the term "scent" is very often misapplied. I fear the public are too apt to accept what has been told them in this matter, and thus a flower that has once obtained the reputation of being a sweet-smelling one retains that character, although perhaps not one in ten likes it. I should like to hear what others have to say upon the subject of sweet-scented flowers.—J. ROSSON.

WITLOOF.

WE take the earliest opportunity of warning our readers against a false impression which has sprung up with regard to Witloof. We are informed that some seedsmen are already selling seed of the common Chicory, which they represent to be identical with Witloof. Like all other cases of substitution, the purchaser will find out when it is too late that he has been deceived. The two plants are perfectly distinct varieties of the same species, as much so as the common Rape and the Swedish Turnip; and the gardener who trusts himself in such hands will look as foolish next winter as the farmer would who listened to the man who told him that the seed of common Rape would produce "Swedes." The Witloof is, in fact, a hearting Chicory, and is one of the varieties of that plant which is grown for its large roots as a substitute for coffee. Mr. Van Houtte well describes the distinction in the last issue of the "*Flore de Serres*." "Everyone knows Barbe de Capucin, the common salad of the Paris markets, and which is produced by common Chicory. In the latter the roots are slender and not thicker than a blacklead pencil, terminated by long, narrow, white leaves, 8 inches or more in length. Barbe de Capucin which does not possess these characters is not to be recognised. In the Witloof, on the contrary, the root is short and thick, and bears a mass of erect, broad, thick, imbricated leaves, and forming a small elongated solid heart, which reminds one of the heart of a *Cos Lettuce*. Except in the mere fact of being blanched, the Barbe de Capucin and Witloof are in all points the opposite of each other; length and slenderness on the one hand, and shortness and bulk on the other, they present to us the two extremes of the series of blanched products which can be produced by the Wild Chicory."

SURFACE MANURING.

THERE is no reason why Mr. Graves and "PRACTICAL GARDENER" should fear that on this or on any other question their observations of facts should be at variance with science. Science is built upon facts, and I only ask that the observations should be accurate, so that the facts may be certain. In the instance under discussion there is no scientific reason for looking on the facts recorded by these gentlemen with distrust.

Animal manure gains something and loses something by lapse of time. Its crude constituents are first resolved into forms capable of assimilation by plants, and are next gradually dissipated in the air or washed away in the soil. A great part of Mr. Lawe's invaluable experiments at Rothamstead have been directed to ascertain the extent and rapidity of this last process, and their result may be said to be that animal manures are less easily washed out of the soil than mineral manures. But this leaves untouched the question, important alike to farmers and gardeners, How far it is better that decomposition should proceed on the surface rather than in the soil.

It would be very interesting if Mr. Graves and others would record fully their experience on this head. Do they apply

the manure fresh from the stables, or do they find it best that it should first be half or wholly rotted-down? Do they find any difference according as the application is in summer or winter, in dry weather or in rainy? Perhaps Mr. Pearson would also favour us with his further experience on a practice of which he is in some measure the originator. Every observation, whether leading to success or failure, is of importance and should be recorded, for it is only from a comparison of results under different conditions that we can arrive at any trustworthy principle for our guidance.—J. B. K.

CHRYSANTHEMUMS.

I HAVE for many years given a good deal of attention to these most beautiful autumn flowers. I had not the advantage of seeing the Temple Chrysanthemums this autumn; but while I am aware that the large blooms produced there are on long and rather leafless stems, I take leave to differ from "A COUNTRY GARDENER" in his opinion volunteered to the lady to whom he introduced himself as to the impossibility of obtaining large blooms on short stems, and also as to the fact that they cannot be made available for a small greenhouse. It is difficult I admit, but by no means impossible, and it requires much more real skill and attention to produce ten or twelve good blooms on a plant with the foliage down to the pot and about 24 inches high, than it does to grow a plant as long as a fishing-rod with one or two enormous flowers. But I have seen such plants grown in a small greenhouse belonging to a lady in whose employ I am, and I hope to see more of them this autumn, in spite of a very regular demand for various other items required by the cook.

The secret of obtaining such plants as my employer likes is rapid growth, careful attention to watering, a full and constant exposure to the sun, with a liberal supply of manure water until the time arrives for the plants to set their buds, when it must be withheld or they will go blind; and above all the cuttings should not be struck before the middle or end of April, and stopped only once—when the lower laterals are well developed.

I put two or three plants in a 10-inch pot, and these properly managed will give three or four good blooms each, nine to twelve for each pot. I am by no means always satisfied with the result, and admit the mop-handle plan is easier and more certain; but one is simply a hideous dry stick with a fine bloom on the top, the other a beautiful plant both in bloom and foliage.—COTTAGER.

THE ROYAL HORTICULTURAL SOCIETY.

YOUR report of the meeting of the 24th February does not quite give the sense of what I said, or at least meant to say. It should have run thus:—That much had been said about a house-to-house canvass to bring in new Fellows living in the neighbourhood of the gardens, but in my opinion the true policy of the Council was to canvass the country for new horticultural Fellows, giving them only horticultural privileges, and charging them only one-guinea subscriptions, and that this proposal had been laid before the Council, and was at full length in the *Morning Post* that morning (24th February).

Now that I am writing may I add, *apropos* of some remarks at the end of the President's speech, page 177, that having since 1873 constantly urged the guinea-subscription plan being tried, I have had time to realise its difficulties. These, I believe, will be most easily met (as is usually the case) by a simple broad line of policy. I would have two classes of Fellows—those who want general privileges and those who want only horticultural privileges. The first should pay, as at present, £4 4s. and £2 2s., the latter one guinea. If the Council fear that the present prop might be shaken before the new one was in its place they might make the guinea fellowships dependant on a sufficient number of suitable applicants. I believe, on the contrary, that some of them who came in on horticultural privileges would change to general, and that the present miserably meagre attendances to see the choice flowers exhibited at the Wednesday meetings must discourage exhibitors, and that more admirers would bring still better shows, and that this would act and re-act. Judging by the articles in the *Saturday Review*, *Pall Mall Gazette*, and *Punch*, public opinion appears awakened to the fact that the present use of the South Kensington garden is hardly a legitimate one. If the gardens were the head quarters of a Society which really represented national horticulture the title to the ground would be very

different from the present one, or from one given by an income of £10,000 a-year from residents at South Kensington.—GEORGE F. WILSON.

INFLUENCE OF LIGHT AND AIR ON LADY DOWNE'S GRAPE.

THIS Grape, notwithstanding its excellent reputation as generally the best late-keeping Grape in existence, has, in instances which have come under our notice, met with great disfavour on account of its thick leathery skin and deficiency in flavour. To a very great extent this character is generally correct, until at least far on in spring, when it develops to some extent a Muscat flavour. During the past winter we had an opportunity of tasting this Grape, both in December and February, grown under the influence of as much light and air as it could possibly be subjected to in this country, in a large very light span-roofed house, with a maximum of glass and a minimum of woodwork, and both direct and diffused light to an extent which is rarely met with; and so excellent in flavour, and so thin and actually tender in skin, were these Grapes, that, had we not known that they were Lady Downe's, we never could have believed that it could be grown with these points so much modified and improved. They were, in fact, rich sweet Grapes with comparatively a thin skin devoid of toughness. No other influence could be credited with the transformation but the extreme light and airiness of the structure in which they were grown.—(*The Gardener*.)

PORTRAITS OF PLANTS AND FLOWERS.

CYPripEDiUM ROEzli. *Nat. ord.*, Orchidaceae. *Linn.*, Gynandria Monandria.—Flowers yellowish green, purple-marked. "*Cypripedium Roezli* is a native of New Grenada, where it was found by Boezl on the banks of the Dagua river, which, according to Regel, occupies a valley between two ranges of the Andes. I find, however, no such river on the map, but a small town of Dagua on the western declivity of the Andes near the Bay of Choco. The specimen flowered at Messrs. Veitch's establishment in January, 1874. It is said to flower perennially and profusely, a statement inconsistent with the habits of any plants in continuous health, but which, if taken with the caution to be used in accepting the laudatory advertisements of choice plants, may be regarded as evidence of its being a very free flowerer."—(*Bot. Mag.*, t. 6217.)

ANTHURIUM SAUNDERSII. *Nat. ord.*, Aroidae. *Linn.*, Triandria Monogynia.—"*Anthurium Saundersii* was received from the rich collection of W. W. Saunders, Esq., but with no information as to its native country, under the name of *A. coriaceum*, *Lind.*; but it widely differs from Endlicher's plant of that name, and approaches more nearly to *A. Ottonianum*, *Kunth*, also a native of Brazil, and to one called *A. jatrophaeifolium* in the Kew collection, a name I have not found in any publication."—(*Ibid.*, t. 6218.)

EPISCIA KETTEROPUS. *Nat. ord.*, Gesneraceae. *Linn.*, Didynamia Gymnospermia.—Flowers pale rose. "Introduced from New Grenada by Messrs. Veitch, who sent the plant in flower in March, 1874."—(*Ibid.*, t. 6219.)

TALINUM ARNOTII. *Nat. ord.*, Portulacae. *Linn.*, Dodecandria Monogynia.—"This is one of a collection of plants of a very remarkable habit, which was sent to Kew in 1867 by the Hon. David Arnot, then Commissioner for the Griqua States, and residing at Bakdale, Albania. For the most part they presented more or less cylindrical or spindle-shaped woody stocks of almost stony hardness, which serve as reservoirs of moisture and nourishing matter during the scorching droughts of the dry stony district they inhabit. Of these some remained for several years in the stove before they showed any signs of life, and when they did so they proved to belong to very different natural orders. The genus *Talinum* is represented in South Africa by a widely diffused species, the old *T. cafferum* (to which the present is perhaps, too, nearly allied), which differs in the narrow leaves contracted at both ends, and, judging from dried specimens, the much smaller flowers. The only other Old World species is *T. cuneifolium*, *Willd.*, a native of tropical Africa and Arabia, which extends eastwards into western India."—(*Ibid.*, t. 6220.)

BOUCHERA PSEUDOGERRAEO. *Nat. ord.*, Verbenaceae. *Linn.*, Didynamia Angiospermia.—Flowers purple. "An annual herb, often becoming almost shrubby at the base, widely distributed throughout the warmer parts of the South American continent, from Peru to the province of St. Paul in South

Brasil, inhabiting woods, waste places, and rubbish heaps."—(*Ibid.*, t. 6221.)

LILIUM PARKMANII.—"The plant, as grown by Mr. Waterer from a not over-vigorous bulb, was about 2 feet high, the stems slender, and each bearing a solitary erect, or nearly erect, flower, though it is probable, as both its parents when well grown produce a branched inflorescence, that this hybrid may have the same habit. The leaves were dark green, numerous, alternate, and ovate acuminate in outline, a good deal resembling vigorous leaves of *L. speciosum*. The flowers were very large; the perianth segments, when straightened, being about 14 inches in length, and the whole flower, as reflexed, having a breadth of 8 inches, the petaline segments 4 inches broad, and the sepaline one somewhat narrower. The basal half or more of the segments was diffused with rosy crimson, most deeply so near their median line, this tinted portion being also spotted richly with deeper crimson spots, and bearing papillae (some of them a quarter of an inch long) of the same rich hue, the tints, as in many other Lillies, having a sparkling brightness which cannot be reproduced upon paper. The upper end of the segments and the margin were of a clear white. The anthers were nearly an inch long, and bore chocolate-coloured pollen, while the style, with its purple stigma, was about an inch longer than the somewhat spreading stamens. The fragrance of the flower was delightful, the odour being sweeter and more delicate in its nature than that of *L. auratum*, but more powerful than that of its mother-parent. This remarkable hybrid, between *L. auratum* and a deep-coloured variety of *L. speciosum*, was raised by Mr. Parkman, the President of the Massachusetts Horticultural Society."—(*Flor. and Pom.*, 3 s., ix., 49.)

HARTSHOLME HALL,

THE SEAT OF JOSEPH SHUTTLEWORTH, ESQ.

THIS is one of the new gardens of England, worthy of note, not by its extent, but by the skilfulness which is apparent in its formation and arrangement, and the good management which it has received from the owner and the ability of the gardener.

The present condition of Hartsholme is a monument of perseverance—a triumph of art over nature, whereby a desert has been transformed into a garden and a barren soil made fruitful by the investment of capital, taste, and labour.

Less than twenty years ago the site of this garden was little better than a barren waste—a low-lying gravelly brash, unequal to support agricultural crops, and where Willows, by the water, and clumps of Scotch Firs were almost the only representatives of permanent vegetation; but now it is one of the most flourishing, as it is one of the most beautiful, gardens in the district, singularly rich in Conifers, shrubs, and ornamental trees in superb health, and, considering the time they have been planted, nothing short of marvellous proportions. That this is so may be perceived from the fact that the shrubs were only planted in 1862, and now the Deodars are 30 feet high and 20 feet in diameter. Wellingtonias are of the same height, and other shrubs and trees have made equally remarkable progress.

Mr. Shuttleworth was no doubt influenced to select this barren wild for his residence by its containing a fine natural lake nearly thirty acres in extent, the reservoir which supplies the city of Lincoln with water. If its banks were bare and the land adjacent sterile, these were only impediments to be overcome, and the greater the obstacles the greater the honour of successfully surmounting them. The owner of Hartsholme long before he erected his mansion had splendid proof of the power of perseverance, and had achieved success in aiding to establish one of the greatest and most substantial commercial establishments in the kingdom. The names of Clayton & Shuttleworth are familiar to every civilised country. They have, by their portable thrashing engines and other introductions, revolutionised agriculture; and when the history of the firm comes to be written it will in truth be found a "wondrous tale." The man who had shared in making from the very foundation a position so commanding as is the undoubted magnitude of the operations in which he shares, was not likely to be deterred from making a garden however flat might be the site and sterile the soil.

The south side of the lake mentioned was selected for the site of the residence, and a spacious mansion in the Elizabethan style was forthwith erected. The ornamental grounds are arranged along one side and end of this lake, the opposite

bank being clothed with Firs and the wide-stretching woods of Skellingthorpe. In the front of the Firs and near the margin of the lake are fine clumps of the feathery Pampas Grass, which are rendered prominently effective by the dark background of foliage. Looking across the water the view is charming; while to the right is another object of notice—the noble cathedral of Lincoln crowning the hill, and in the line of vision is also the castle which William the Conqueror erected to overawe his subjects. The view to the left is also pleasing: the lake contracting and vanishing through a long straight avenue of Willows. This water avenue is highly ornamental, and is unquestionably one of the finest features of Hartsholme. Such are the views from the grounds, we will now glance at the grounds themselves.

They were laid out by the eminent landscape gardener Mr. Milner, and right well has he done his work. Hartsholme may be said to be entirely artificial, yet its treatment has been so bold and wide in its scope that art is made to appear as but the "handmaid of nature," and every clump, mound, terrace, and dell appear to have a purpose as natural and necessary accessories to the lake. The lake has evidently been the keynote of the artist, and he has used it dexterously and skilfully. The carrying-out of the designs has been a work of great magnitude. The foundation was a comparatively barren soil, and the fact was wisely recognised from the first and boldly grappled with. No tampering measures were adopted and leaving the rest to chance and hope, but a solid foundation was made; and not only were new trees brought but new soil was provided for them to grow in. And here lies the secret of the success of the wonderful growth which the trees have made—new soil. This was no mere sprinkling and mixing with the old, but thousands of loads of fresh soil were brought; and it is to the thoroughness with which this important work was carried out that the great success which has been attained must be primarily attributed.

On entering the grounds by the carriage drive we find inside the gates a substantial-built ornamental lodge. To the right is a fine clump of Hollies, consisting of the best varieties in cultivation of the Golden and Silver-leaved kinds, intermixed with Irish and common Yews and flowering shrubs. On the left in a sheltered recess is a specimen of *Wellingtonia gigantea* of symmetrical shape 80 feet high, and a fine group of *Cupressus Lawsoniana* 16 feet high, feathered to the ground and in exuberant health. There is no crowding of trees and shrubs to be found at Hartsholme, for all the commoner shrubs have been judiciously thinned, so that every plant is a perfect specimen. Approaching the Hall a large irregular-shaped bed of *Rhododendrons* is noticeable. It comprises numerous rare varieties; and when covered with rich masses of bloom in various colours from the deepest crimson to the most delicate white, many of the trusses measuring 24 inches in circumference, the effect is most beautiful and imposing.

On passing the front of the Hall we descend a flight of stone steps in front of the mansion, and notice a sunk panel or winter garden tastefully laid out and filled with dwarf-growing evergreens, consisting of *Rhododendron Wilsoni* edged with *Skimmia japonica* and dotted with dwarf varieties of the Golden-leaved Hollies, which help to light up the more sombre hues of the Ives and Yews. We next pass on to the dell, but at every step there is much to admire. On the left is a fine group of *Cedrus Deodara* 30 feet high and 20 in diameter; on the right is a noble specimen of *Wellingtonia gigantea* 30 feet high of symmetrical shape. We now enter the dell, which is a place of rich floral beauty difficult to describe. Banks of *Rhododendrons* meet the eye on every side. At the bottom of the dell is a small ornamental pond containing the white Water Lily surrounded by a carpet of grass, standing on which in the early summer we are as it were buried in a rich mass of gorgeous flowers sheltered on every side by tall trees. Noticeable here is *Abies Douglasii* 30 feet high with a spread of branches 16 feet, and *Thuja gigantea* 24 feet high. We next come to a specimen of *Cupressus Lawsoniana* 24 feet high of perfect shape, and the ever-to-be-admired Cedar of Lebanon.

We now come abruptly to a terrace walk 800 yards long by 12 wide. This terrace runs parallel with the Skellingthorpe road, which is completely masked by a bank of shrubs. On the opposite side is a line of Beech trees 30 feet apart, which promise in the course of a few years to make a very inviting shady promenade. The terrace runs along the margin of the lake, and is upheld by a substantial and ornamental brick wall with recesses at equal distances; these are planted with *Rhododendrons*. From this terrace the view is very beautiful: on

the left the mansion, on the right a well-wooded and park-like landscape, and in front the lake, with a bold island in the centre and a large fleet of black and white swans.

We now pass to the west side of the pleasure grounds, traversing a winding walk with many fine specimen shrubs on either side, terminating at the head of the lake. The flower garden proper is on the south side of the mansion. Although of limited dimensions it is exceedingly pretty when clothed in its summer attire. Formerly it had in its centre a circular bed elaborately embroidered with Box, which was considered the gem of the place. It is now, however, replaced by a beautifully designed terra cotta fountain (by Pulham of Broxbourne), surrounded by small flower beds. Another straight broad walk extends from this point about 150 yards long, with embankments on either side consisting of projecting mounds

and sheltered recesses. The banks are planted with a choice selection of shrubs; the recesses, which are about 20 yards apart, are planted alternately with Deodaras and Wellingtonias. At the extreme end of this walk is an ornamental Gothic summer house fitted up with coloured glass windows by Firman of Manchester. During the last six or seven years the trees and shrubs have made such rapid progress that it has been no light task for the gardener to keep abreast of the work of thinning and pruning. Many shrubs have had to be removed to make room for those left, but by perseverance and hard work all are now in admirable order, and no better kept shrubberies and pleasure grounds are to be found than those of Hartsolme; their extent is about twenty acres.

The kitchen garden is conveniently situated, crosses walks dividing it into four quarters with walks round the sides. The



Fig. 63.—HARTSOLME HALL.

walls are covered with Apricots, Pears, Plums, and Cherries, which annually carry heavy crops of fruit. Pears, Plums, Apples, and Cherries are grown as espaliers by the sides of the principal walks trained to strong, strained, galvanised wire. Vegetables are also largely and well grown in outside quarters of the garden. Near to the mansion is erected a very fine range of glass 150 feet in length by 18 feet in width. This range is divided into four compartments, consisting of a conservatory and two vineries and orchard house. The houses are approached from the south terrace through a Gothic archway and a small alcove intended for a fernery. On the end wall of this alcove we noticed a fine plant of *Oytisus racemosus* covering a space 6 feet square and profusely clothed with yellow flowers. The Heliotrope is also employed as a wall plant, and choice varieties of perpetual-flowering Carnations 5 to 6 feet in height were covered with bloom. The white and crimson Glove, Mignonette, forced Roses, Lilies of the Valley, and other plants, are largely and well grown for the conservatory, which is occupied by a stage surrounded by a path with latticed tables on the sides. The next house is the early vinery. The Vines had evidently a robust constitution, and the Grapes from Hartsolme have gained a good local reputation. The next compartment is a late vinery, and from these two vineries alone excellent Grapes have been cut nine months out of the twelve. The sorts grown are Black Hamburgh, Muscat Hamburgh, Muscat of Alexandria, Lady Downe's

Seedling, Gros Guillaume, Foster's White Seedling, Mrs. Pinée's Black Muscat, and Black Alicante. Mr. Allis finds that to bring out the true qualities of Alicante it must be grown in an early house, the Grapes keeping better after being cut than the same kind grown in a late house, besides the quality being much better. The Alicante is not keeping quite so plump this season owing to the cold and wet summer and the crop being somewhat heavy, while Lady Downe's which has smaller bunches are at this date (February 24th) fresh and plump; but in favourable seasons Alicante is the best late-keeper. Muscat of Alexandria and Bowood Muscat have ripened and kept very well in a late house encouraged with a little fire heat and plenty of air in the ripening season. Bowood Muscat is similar to Muscat of Alexandria, but a hardier constitution. The front walls of the vineries are built on arches, and the Vines planted inside with about 6 feet of border inside and about 14 feet wide outside on a gravelly subsoil. The outside borders have a good thick coating of farmyard manure early in the autumn sufficient to keep out frost. The gardener is of opinion that the rainfall has something to do with Grape-growing. In 1874 the total fall at Hartsolme was a little over 16 inches; in 1875 it was 22 inches and the Grapes better. He also thinks it is a mistake to keep Vine borders very dry at any season of the year where the subsoil is light.

At the extreme end of the range is an orchard house, but the trees are now planted out and heavier crops are produced

than when they were grown in pots. They are in excellent health. Contiguous to this range is a span-roof forcing house in which Cucumbers and Melons are grown; there are also the ordinary adjuncts of frames, &c.

Hartsholme is a beautiful garden and is well managed. For some years it was in the charge of Mr. Allis, who is appointed to a higher charge on another estate belonging to Mr. Shuttleworth. Mr. Allis is, I believe, to be succeeded by Mr. J. Holah, who is well known to be a skilled gardener. At Hartsholme he will have scope for his abilities, and both place and owner are worthy of his best services. Hartsholme is about two miles and a half from Lincoln.—J. W.

SOWING AUCUBA BERRIES.

I KNOW of no place where the berry-bearing Aucubas succeed so well as here. There is one bush now so covered with fruit that about a week since I directed a man in the garden to tie up one of the branches, which seemed likely to break from the weight of berries upon it. It is astonishing how far the male plants spread their pollen. I think we have some plants with a good crop of fruit at the distance of 100 yards from the male plant. One of our plants is now about 7 feet high and of about the same width, with berries I might say almost equal in number to its leaves.

As to the sowing, we have merely placed the seeds in the soil in the kitchen garden, and with perfect success; and it may be useful to state that I have every reason to believe that the male and female plants raised from seeds ripened here flower at the same time. Though the bought male plants flower earlier, they are never with us too early to affect the old Aucuba shrubs which we have had for very many years.—W. W. E. WYNN, Penarth, Towyn Merioneth.

SOIL FOR RHODODENDRONS.

RHODODENDRONS do with me as well in a good Rose soil as in peat—in fact I think they do better. I can obtain plenty of black bog, which is equivalent, I suppose, to peat, but I find it unnecessary. The Rhododendrons here are all in the churchyard with standard Roses, and I find the two do wonderfully well together.

If anyone wishes to make a very effective border I should recommend him to have a background of Rhododendrons, and next half-standard Roses about 3 feet apart. Between each standard Rose plant *Lilium auratum*, and in the next line Chrysanthemums, and then Gladioli. He will have flowers then from May till November; and he can, if he likes, plant Hyacinths and other bulbs *ad libitum* in the autumn, provided he removes them in good time after flowering. I make use of this border in my churchyard, and it is only in the depth of winter that we are without flowers. I find Gladioli answer wonderfully well between standard Roses, and Mr. Kelway was astonished at the height that they grew here.

With regard to growing Roses in my churchyard a lady made a most delightful remark to me once at a Rose show. "Oh! Mr. Camm, I never will look at your Roses, for I hear they are grown in the churchyard; and that being so, I know from where the trees derive their nourishment, and I consider the idea most horrible." In vain did I assure her that the roots never went further than a foot into the ground, and that our object was to keep them as near to the surface as possible. She was as obstinate in her conviction as an old man once was in Sussex where I was curate, who never would eat mutton, for he was afraid of eating his grandmother, as the sheep grazed in the churchyard where she was buried.

Rosarians are anxiously looking out for the fixtures of the Crystal Palace and Alexandra Palace Rose Shows. It is now the beginning of March and they are not out. These London shows ought to be fixed at the earliest possible date, as country Rose shows must give way to them, and it is necessary to fix the day early so as to avoid clashing with other shows. Perhaps before these lines are in print we shall see the announcement of the dates in your columns.—JOHN B. M. CAMM.

I CAN endorse all that Mr. Luckhurst has said, and go to greater extremes than he has done. Here Rhododendrons grow well and flower abundantly in every kind of soil except sand. I never knew in any locality the soil to vary so much in a given area as it does in this neighbourhood. If I had to choose between peat and loam I would certainly prefer the latter, unless I could procure some better peat than we can

obtain for either love or money, not excluding the Surrey far-famed peat.

Here we have Rhododendrons growing and flowering most luxuriantly in a very stiff clay, which in a dry summer is so hard that it is almost impossible to get a spade into it; but where the clay is well drained the plants do well, but where the drainage is defective they only just live. Those in loam without a particle of peat grow too much, for we have to be constantly thinning them out or they would soon spoil each other. We have had peat from a neighbouring forest to plant some of them in, but those are best in the loam. I was removing some last week which had been planted sixteen or more years; where the peat had been put to them they were not nearly so well rooted as those in pure loam. Localities and the quality of the peat may have an influence upon them, but in this place and neighbourhood anyone can see the above facts for themselves.—D. WALKER, *The Gardens, Dunorlan, Tunbridge Wells.*

In the first paper on page 84 it was stated that "the planting of Rhododendrons was well and carefully done, and the rest was left to Nature." Let me commend this sentence to the attention of "J. B.," with a little more of my practice and its results.

I have repeatedly explained the importance of a careful preparation of the soil for all kinds of trees and shrubs, and to none does this apply more forcibly than the Rhododendron. Crowd its roots into a hard crude mass of soil and it will exist even for years, but it will make no appreciable progress. The growth, if any ensues, is hardly perceptible, the foliage becomes of a sickly yellow hue—the plant is in a state of utter stagnation. Break-up that soil, stirring it deeply among the plants, throwing it up roughly to the action of the air—you need not disturb the plants—and mark the result. Why, it is just as if a magician had waved his wand over the spot with a vivifying power that is absolutely marvellous. The foliage acquires the deep green tone of health, shoots and branches spring forth clothed with foliage that is gigantic in comparison to that upon the old and stunted growth, and a brief season or two brings to the scene its highest finish in the crowning glory of those lovely flower clusters for which this shrub stands unrivalled. This is no flight of fancy, but is a simple deduction from actual experience. Plant well if you plant at all, stir the soil deeply, trench it if possible, only give the plants a good start, and all will be well; but pray do not just stick in your plants and forget them. A little pains and care with the soil and plants in the first instance will ensure successful results; without them failure may, and in point of fact often does, ensue. We ought not then to lay blame upon the soil.

There is nothing equal to the logic of facts to enforce a truism. Here is an example for "J. B." Some three years ago two gentlemen purchased a few thousands of four-year seedling Rhododendrons, each having an equal number, and placing them in the hands of their respective gardeners, with a request that due attention and care should be given to their culture. What is the result? In one instance there is a fine stock of healthy bushy plants, most of which will be a couple of feet high by next planting season, and in the other every plant has failed. Now, peat has nothing to do with this success, for none was used. The plants were first put thickly into raised nursery beds of ordinary loam, watered, weeded, and transplanted in due course—all very ordinary and simple matters, but eminently necessary to success.

Turning now to what "J. B." has said about loam, he evidently thinks that its staple must be of the highest excellence—"beautiful sound yellow loam that makes a gardener's teeth water." I can assure him that the soil with which I have to deal is far more likely to affect the eyes than the teeth, for it is certainly the reverse of beautiful or sound. It is thin, and so miserably poor that no vegetables will grow in it in its virgin state. But then I have proved that the Rhododendron does not require a rich soil; at any rate, not rich in the ordinary acceptance of the term. Soils apparently poor evidently contain certain nutritious substances suitable to its requirements; and this opens up a very wide field for discussion as to the adaptability of certain plants to certain soils, leading to the conclusion that all soil contains nutritious matter if we can only discover the class of plants for which it is suitable. This matter is so important that I hope to revert to it more fully upon some future occasion.

By all means use peat if you have it. I have not the slightest objection to it, but do not let it prove a stumbling block

to you. Do not let the want of it hinder you from planting if you are not in a limestone district. And pray, "J.B.," do not suppose that I shall mislead in this matter. I have no reason to avoid using peat if it was really indispensable, for I have an unlimited supply at my disposal—fine natural beds, many acres in extent and of excellent quality. It might be asked with much propriety, Does the use of peat always ensure success? It does not. How frequently one meets with sickly clumps of *Rhododendrons* planted in peat! I have sometimes wondered what the proprietors of such miserable scrubs thought of the dogmatic sentences of the "peat or nothing" men—that is to say, if they ever took the trouble to think about it at all; not that I would infer that the peat is at fault—no, it is the planting. Again I say, Plant well if you plant at all. How can you suppose a shrub will thrive if you thrust its roots into a puddle of stagnant water? and that is precisely the case when peat is thrown into an excavation in a mass of clay or other tenacious matter holding water like a pond. It is just a death-trap, in which healthy roots cannot exist. Flowing water, or rather water that is percolating through the soil, is not fatal to the roots, for they revel in such soil. In circumstances of this nature I certainly prefer peat soils. For example, in planting a fringe of Alpine *Rhododendrons* around a fountain the soil used was turfy sods broken up roughly and broken bricks in equal parts, with a drain connected with the fountain waste. Thus, although the soil is constantly saturated with the fountain spray, yet there is no actual accumulation of water about the roots, and the condition of the plants is satisfactory in the highest degree.

When the *Rhododendron* assumes its legitimate position and becomes the shrub of all gardens it will quite supplant the Laurel, to which it is decidedly superior in beauty of foliage, to say nothing of the blossom. I could pick foliage of extraordinary size, and I am convinced it is not uncommon, for I have just received a tracing of a leaf measuring 11 inches long by nearly 5 inches wide, growing upon a plant in the nursery of Messrs. Casson, out on the moors, of Thorne near Doncaster.—EDWARD LUCKHURST.

PHALÆNOPSIS SCHILLERIANA.

THE following history and mode of culture of the fine plant which was exhibited by Mr. Bass, M.P., at South Kensington, and to which the medal was recommended to be given from the Davis fund, has been forwarded to us by Mr. Bennett, the skilful gardener at Bangemore.

"The plant was sent from India about three years since by Mrs. Plowden, a great enthusiast in horticulture, with a numerous collection of other Orchids. They were very badly packed, so much so that out of twenty-seven *Phalænopses* of sorts only six arrived with any life in them. The one in question had one leaf about 8 inches long quite shrivelled up, and two roots broken off. They arrived in that deplorable condition that, though worth a considerable sum in India, I sent word to Mr. Bass when the plants were unpacked that I thought they were worth about £20. Immediately upon unpacking I hung them on the back wall of a north house, against which I had first nailed some garden mats. These, from being regularly syringed, kept the plants moist.

"There were several blocks of mahogany wood sent over with them, and to one of these I wired the *Phalænopsis*; and as it began to root to it after being on the back wall for six weeks, I put the end of the block in an 11-inch pot, filling-up the pot and making the block fast in it with crooks and some lumps of Eppe's fibry peat, covering the top of the pot and the whole of the block with live sphagnum. The first season the plant sent up a weak flower spike; the second season the roots made great progress, running down the block and all among the crooks and peat, and the plant made two leaves 18 inches long and 5 wide, and in the spring threw up two flower spikes bearing one hundred flowers. The peat was then, as far as possible without disturbing the roots, picked out and fresh added, and last season the plant made two more leaves 1 foot long and 5 inches wide each, and showed two more spikes of bloom, but from the leaves not being quite so long this season as last, I decided on only leaving the one spike.

"The present spike is 5 feet long and 3 feet across, and the plant measures, including the spike, 6 feet 2 inches high. There are nearly eighty flowers on the spike. The block stands about 15 inches out of the pot, the plant being on the extreme end of it, and I cannot help thinking that the position of the plant has something to do with its success, as I have several

in the same house under the same treatment as regards water and temperature, only some of them are in pots and the others in baskets, none on blocks in pots; these are all doing well, but nothing extraordinary. I shall grow them on blocks for the future.

"The temperature has been for the months in autumn and winter from 60° to 65° at night with a rise of 5° by day, the summer temperature 70° to 75° at night with a rise by day, with plenty of moisture; the plant has been well watered, and shaded from the sun. I cannot too strongly recommend Eppe's peat for Orchids; I have found it as fresh when re-potting as when first used."

[Barely, if ever, has this beautiful Orchid been exhibited with a finer spike than the one referred to, and we are glad to find that Mr. Bass's valuable plant received no injury by its long journey, which is encouraging to others contemplating the exhibition of commendable specimens.—Eds.]

ROAD-MAKING.—No. 8.

HAVING provided for the foundation we now come to what may be called the finishing material, and here I expect to be met with the usual remark, "The product of the neighbourhood is all we have to employ." This is doubtless true in many cases, but not in all; and even where there is no choice the mode of using such materials has much to do with the cost of the road as well as its quality, for to empty cartload after cartload upon ground plunged-up with wheel-ruts and other unevenness, without any attempt at levelling, is downright waste. Where the work has to be done in wet weather the carting ought always to be done upon the road that is made, and it is better not to take either horses or carts upon the soft ground on which the stones have to be laid; and if it be very soft a slight covering of heath or branches—even hedge clippings or rubbish of any kind—will save a great many stones being lost in the clay or mud. As to the material, I have no hesitation in giving the preference to broken stone over sifted rounded gravel. Although the latter often makes a good hard road, it is some time before it sets well, especially in hilly roads; so that where it is possible it is better to have at least a portion of broken stone to mix with the gravelly pebbles.

It has often been a question amongst those most interested in the well-being of our roads, whether the somewhat hasty abandonment of the old-fashioned pavement or causeway which took place about a century ago, was not in many cases an injudicious one. Certainly the rage for macadamised roads, as they are called, has received a check since then, and the pavement in some streets, &c., that was pulled up to make way for this so-called improvement has been laid down again. Good paved parish roads are yet to be met with in Cheshire and Lancashire, and not very many years ago one of the turnpike roads leading out of Bolton had rather a peculiar appearance, one-half of it being paved and the other half macadamised, a sort of a kerb to the paved portion running-up the middle of the road, and I believe the latter was most used in winter, while the other was the summer favourite. But paved roads of a common kind are often made of a soft stone where a hard one is not to be had, and it answers much better in this form than if it was broken-up, besides which a paved road is much easier kept clean in dirty weather; and it would be well for those interested in such matters to give some further trial to the pavement before they too hastily condemn it, for notwithstanding the perfection to which macadamised roads have been brought they are costly, and in spite of the comfort which the steam roller has given to the pedestrian crossing a street that is newly covered with fresh stones, it is vexing to find how soon the operation has to be repeated. In the formation of new places the value of paving should always be considered, for it is particularly suitable for many positions, and especially by the sides of buildings and where special work has to be done needing a smooth hard surface.

Roads ought not to be made too high in the centre, as by that means the traffic is too much confined to the middle, but a little roundness is necessary to throw the water to the sides. Where the traffic can be controlled at the beginning it is much better for it not to be always in the same route. A hint this way from someone in authority will do much to more speedily render the road a good one all over instead of in one or more tracks. A rolling with a heavy roller will do good after rain, especially if done early enough in the winter for the road to become consolidated before dry weather sets in.

We would not advise that any finer gravel be put on until then, as it is so likely to be worked down to the bottom; but if it be late and dry weather imminent, a scattering of finer material may be made on the top, or sometimes finely broken stones can be had which do equally well. Chalk is sometimes used, but it is so liable to render a road impervious to rain that we would rather adopt something else, but it may be used rather than that loose stones should roll about all the summer. I will conclude by again urging the propriety of not begrudging the spade-and-mattock work at the beginning, which after all is half the battle in the formation of a road, and the ease and comfort it gives in travelling afterwards.—JOHN ROBSON.

BEEBLE EATING IRIS.

In the page 180 to correspondents Mr. W. asks what proof I have of *Carabus hortensis* having eaten *Iris reticulata*. The plant was under a glass in a pot. It was eaten down, and the beetle found on it. The gardener told me that on squeezing it a quantity of green stuff came out, just as from a caterpillar: this can hardly have been anything else than the remains of the unfortunate plant; and the only way I see of escaping the conclusion is by supposing, without evidence, that something else devoured the *Iris*, and that this something was devoured by our beetle.—G. S.

EPIPHYLLUMS.

At page 192 of vol. viii. New Series of this journal is an article from my pen on these very desirable plants; in that, as in the present instance, in reply to a correspondent. Since then twenty volumes have been issued and half as many years passed, during which it is anticipated there are many new subscribers to whom it would be useless referring to the paper in question; therefore I may, without prejudice to what has been previously advanced, now report progress, convinced that a decade of experience the most advanced in horticultural art will have effected considerable improvement on former practice; for let no one think they are upon the threshold of an horticultural millennium, rendering continued efforts futile.

Epiphyllums are numerous, there being a dozen and a half or more of varieties of *E. truncatum*, all more or less distinct in contour and of colour of flower, sufficient to render appreciable a distinctness in varieties which in species would not be admitted. There is also a difference in the time of flowering of the several varieties. The plants are grown in two ways—namely, on their own roots, and grafted on *Pereskia* stocks. On their own roots they do not attain to anything like the dimensions of grafted plants, though this mode of culture affords very useful plants for facing and filling-in where taller plants would not be admissible, and they possess an advantage over grafted plants in taking up less room, small pots only being required.

Cuttings strike freely, kept for a few days on a shelf for the wound to dry before insertion in light sandy soil. The cuttings may be of any size, from the simple shoot of 3 or 4 inches in length to that of a branch with several armbuds and many shoots, and inserted no deeper in the soil than is sufficient from the pressure of that against the cutting to prevent its falling over; or a small stick thrust alongside the cutting, if large, will maintain its equilibrium. The cuttings should be taken off immediately beneath a joint, the joint of severance being secured for the cutting. When the plants have been kept over-wet during the period of rest and the roots have decayed, or injury by any other means has prevented the plants deriving support from the roots not increasing in size, aerial rootlets are formed sufficient in most cases to maintain the plant (if the atmosphere be humid) for some years, leading to the inevitable conclusion of the plant's epiphyllal nature. I have further noticed that if moss be placed around the shoots at a joint—no matter how thick it may be—and secured with a ligature of matting, that roots will be emitted if the moss be kept moist, and the shoot or branch being detached and potted will grow away freely if placed in a brisk moist heat. Cuttings, however, root so readily that there is no need of a preparatory process.

Cuttings should be inserted in spring in light open soil in a brisk heat, keeping moist but avoiding watering more than to keep the soil in a moderately moist state, the cuttings being inserted around the sides of the pots, and when rooted potted-off singly in 8-inch pots. If the plants have filled the pots with

roots, and have made, or are making, good top growth, shift into 4½-inch pots in May or June, and by the end of July or early in August the growth will be complete. They should then have a lessened supply of water, and the sprinkling overhead be discontinued, and have a light and airy position. A warm greenhouse or cool stove—an intermediate house, in fact—gives the most suitable temperature, but the plants may be grown very well by those having in addition to a greenhouse a vinery started in February or March, which from the moisture and heat will conduce to a vigorous growth, that being completed by the time the Grapes are ripening, when the plants may be removed to a light airy position in the greenhouse with water only to keep the growths plump.

The plants if kept in an intermediate house will commence flowering in November and continue until February. When the plants have ceased blooming water should be withheld (the plants having after the flowers appear been kept moist), but not so as to cause the growth to shrivel. If they have a month to six weeks of this rest after flowering the plants subsequently grow much more vigorously, and especially if the growth is kept from being made until the days are lengthened. Any pruning required should be done when the flowering is over and the plants are kept dry. It may be practised advantageously when the growths are very close, and to give symmetry by the reducing of irregular growths. It may be done by breaking off the shoots at a joint, the plants appearing to grow all the better for a good thinning of the shoots.

When growth commences the plants should be repotted, taking away as much of the old soil as possible without injuring the roots, and they may be returned to the same pots, adding fresh soil. The most suitable compost is light turfy loam, very fibrous and chopped up moderately small, with an addition, in equal proportions, of dry cow dung, sharp or river sand, and crocks—or what is better, soft bricks broken into small pieces. The potting should be moderately firm and the drainage thorough. At one time I thought fibrous peat should form a part of the compost, but I do not now employ it for these plants, they making a more vigorous growth in that at present employed.

When the plants are in free growth and the roots active liquid manure may be given abundantly; a peck of cow dung to twenty gallons of water answers well, or one peck of sheep droppings to thirty gallons of water, one peck of soot to thirty gallons, or one pound of guano to twenty gallons of water, avoiding making the soil sodden, and leaving off the applications of manure water when the growth is complete.

Although the plants may be grown in a vinery where they must necessarily have shade, yet I find shade is not necessary even during growth, the plants without it growing more strongly, and have much better substance and larger blooms. Afford them light, therefore, if possible during growth, and free ventilation with abundant atmospheric moisture, sprinkling or syringing twice daily (morning and afternoon), and a temperature of 60° to 65° at night, 75° to 85° or 90° with sun and air by day. When the growth is complete 50° to 55° night, 60° to 65° day, to 75° with sun will be suitable; and afford water at that time to maintain the growths plump, for over-dryness is prejudicial to these plants, though not perhaps so injurious as extreme moisture.

Useful and attractive as are plants on their own roots, those grafted on the *Pereskia* stock (*Pereskia aculeata*) are infinitely superior both in vigour of plants and their ornamental character. The stocks are readily obtained by inserting cuttings any time during summer, but the present is perhaps as good a time as any, as the *Pereskia* now starts into growth. Cuttings of about 6 inches in length, which may be of the growing points or the shoots cut into lengths, inserted singly in 3-inch pots in light sandy loam and plunged in a bottom heat of 75° with the soil just moist, will soon have roots showing at the sides of the pot. The cuttings, it may as well be said, will strike freely during summer in a vinery or other place where there is a brisk moist heat; and when they are established we shift into 5-inch pots and encourage growth by affording bottom heat and plenty of moisture, the shoots being supported by stakes as they advance in growth, the plants being taken up with a single shoot; and when they have attained a thickness for grafting equal to that of the scions the operation may be performed, selecting for scions the roundest shoots and such as are likely to branch equally. The stocks should be kept rather drier and withdrawn from the hotbed, if in one, allowing about a month or six weeks to become ripened, and then they are ready for grafting.

For table plants short standards are best about 15 inches high, and the usual mode of working these is by wedge-grafting. A cleft is made in the stock at the top and about an inch long to receive the scion, which is cut like a wedge and must fit exactly. This mode of grafting is illustrated and described in the "Cottage Gardener's Dictionary," page 291, and "Science and Practice of Gardening," page 245. The graft being secured by thrusting through the stock and scion a spine of the *Pereeskia*, binding lightly with cotton so as to keep the edges close, and grafting wax may be placed over it to exclude moisture and air; or it answers equally well to bind a little more over the union and keep it moist with the syringe, the plants being kept rather close and moist until the union is complete, as it will be in three weeks or a month, or it may be longer, as the plants are in a medium for effecting a speedy growth.

In the case of pyramids the stocks will require to be taller and stronger than those required for table decoration; they should therefore, when the 5-inch pots are filled with roots, be transferred to 9-inch pots, continuing the moisture and bottom heat until they are sufficiently strong for grafting. If extra tall plants are wanted the stocks may be cut down to 9 inches, and kept rather dry until they break, when they should be shook out, returned to the same pots, and have brisk top and bottom heat, with abundant moisture, selecting the strongest shoot and securing it to a stake, removing the others, and shifting into 9-inch pots when the 5-inch pots are filled with roots. These plants are dried a little when of the size required for grafting to induce ripening, and are grafted, commencing at about 9 inches from the rim of the pot, and at that distance upward on opposite sides of the stock, the top of the stock being grafted as for dwarf standards, the only difference between it and those on the sides being their insertion on the side of the stock instead of on the top, a sloping incision being made with a sharp knife extending down the stock an inch, a scion being selected of the same diameter as the stock, and prepared wedge-like to fit exactly the incision in the stock, into which it is inserted, secured with a spine of the *Pereeskia* passing from the front through the stock and scion, securing as before stated with a little moss tied over the union, and kept damp by frequent sprinkling of water from a syringe. A moist and rather close atmosphere facilitates the operation.

Standards may be had of almost any height, but for general usefulness the low standard is best. In the case of standards 18 inches high for table purposes a scion may be put on the top and two others about 6 inches lower down on the sides of the stock, which of course form a head sooner than one scion; whilst for tall standards one on the top and two 9 inches down on opposite sides of the stock, but with some little distance higher or lower in each case, so that they may not be upon the same plane, for that would be to cut the stock through.

It will be found that the stem will not be able to support of itself the succulent put upon it, and wood stakes are certain to break off at the surface from decay, and for tall plants do not maintain the plants erect. Iron stakes with three or four prongs fitting within the rim of the pots are most suitable, and should be painted green. Even these, after the plants become well furnished with spray, are not certain to maintain the equilibrium of the heads. I have seen a wire run round the pot beneath the rim, and from this copper wire taken to the centre stake, securing to it and the wire round the pot under the rim, and three or four of those equidistant around the pot prevent the displacement of the head from the perpendicular. It is also well to secure the stock and the scion to the upright stake with copper wire, or lead answers when the growths are moderate.

The plants will hardly need potting the year of grafting, but the following spring the potting should be liberal, giving a plant from a 9-inch pot a 13-inch or 15-inch pot, watering carefully until the roots are in possession of the fresh soil, then watering copiously, and when full of roots with liquid manure. In future years the pots may be increased in size, but not so much as in the first, and after the second year the surface soil may be removed, and a top-dressing given of equal parts of turfy loam and cowdung, potting only in alternate years.

Well-grown plants of *Epiphyllums* are splendid objects, and the flowers are of the finest for cutting—G. ARBER.

two years old. I have Melon seed saved in 1857 in first-rate condition, and Cucumber seeds of 1861. I think it mostly depends in the place where they are stored.—L. ARTHUR BRENNAN, Clerk, Cloughban, Pomeroy.

DO RABBITS EAT LILIUMS?

Now that these beautiful flowers—I mean *Lilium auratum* and the different varieties of *L. lancifolium*—are being freely planted in shrubberies, a question of considerable importance is raised as to the danger of the young shoots being devoured by rabbits. I have recently made private inquiries on the point, and the information I have received is somewhat conflicting, the purport of it being that rabbits will eat the shoots of some kinds of *Liliums* leaving others untouched, and that *L. auratum* generally escapes injury. If cultivators of *Liliums* in rabbit-infested districts would communicate their experience on this matter, naming those sorts which rabbits injure and those which they do not molest, the information could not fail to be valuable and opportune.—J. W. B.

[We have other inquiries on this subject, and we should be glad to receive the experience which our correspondents are seeking.—Eds.]

NOTES AND GLEANINGS.

CLEVELAND HOUSE, Clapham Park, Mr. S. Ballis's small but well-managed garden, is celebrated for the high character of its summer carpet bedding. Equally good practice is to be found in the winter, the plants both in the stove and greenhouse evincing marks of high culture. In the former structure the Palms, Crotons, Orchids, &c., are, if not large, in superb health. In the greenhouse the beautiful and elegant *Boronia pinnata* is in fine condition; *Chorosema Chandlerii*, a plant two years old in a 10-inch pot, covers a 4-feet globe trellis, and is a perfect mass of flowers; *Primulas* are 20 inches in height and more than a foot through, perfect pyramids of bloom, and *Epacris* are admirably cultivated. Mr. Legg promises also to add to his fame as a cultivator a creditable position as a hybridiser, as he has not only succeeded in effecting crosses between the best of the Crotons, but has already raised a batch of seedlings which must be looked forward to with the greatest interest, as, considering their parentage, they cannot fail to prove varieties of distinct character and great merit. The seedlings show great dissimilarity even in their cotyledons, some of which are striped and mottled, which is a tolerably safe index of the brighter colours to follow. When we note that these seedlings are the result of intercrossing such fine sorts as *C. Weismannii*, *C. undulatum*, *C. majesticum*, and even *C. volutum*, it will be at once admitted that Mr. Legg has obtained plants of which he may be considered fortunate to possess. It is not chance, however, but well-applied skill that has produced this unusual and highly promising batch of seedlings, and Mr. Legg has our congratulations.

—We have received from Mr. George Lee, Clevedon, a box of blooms of his new VIOLET *PANCA CONSORT*. We have seen and grown other improved Violets which have been introduced by Mr. Lee, but never have we seen flowers in any material degree approaching the remarkable blooms now before us. We think their colour is deeper and richer than in other varieties, and they are undoubtedly superior in size, and especially in the remarkable substance of their petals, to any examples of this flower which have hitherto come under our notice. Many of the flowers exceed $1\frac{1}{2}$ inch in diameter, and they are supported on stout stems 5 inches in length. This is a princely Violet, worthy of the name it bears, and will sustain the reputation of its raiser.

—M. ADOLPHE BRONGNIART, the distinguished French botanist, died in Paris on February 19th. He was born in 1801. Besides his many botanical works, Brongniart is known as one of the first to discover the pollen-tube and the important nature of the offices performed by it in the fertilisation of plants.

—THE noble tree (for such it really is) of *BROWNEA GRANDIOPES* that some weeks since gave promise of a more than ordinarily fine bloom in Glasnevin Gardens, Dublin, has fully realised our anticipations, having up to this time developed some three dozen or more of its huge compound brilliant flower heads, each as large as a child's. In some instances two are borne on the extremity of the same branchlet, weighing it down with a duplex mass of floral wealth weighing little short

AGE WHEN SEEDS CEASE TO GERMINATE.—Peas and Beans will germinate, I know, after three years, and Parsnips when

of a stone. The more brilliant-coloured but less striking *B. grandiflora* in the same house is also producing a long succession of its showy and highly-coloured pendulous flower heads.—(*Irish Farmers' Gazette*.)

—MR. LUCKHURST has recently directed attention to the fact that *Rhododendrons* may be cultivated in any soil which is not of a limestone nature, and that peat is not a *sine quâ non* for these fine evergreens. A conclusive example of *Rhododendrons* growing in loam is afforded in the beautiful grounds of Mrs. Hope at Deepdene, where they grow in the wildest luxuriance, and are driving common Laurels out of the grounds. At Deepdene there are many acres of these evergreens, and thousands of self-sown seedlings form in places an almost impenetrable thicket. The soil is sandy loam, and the vigour of the acres—almost miles—of *Rhododendrons* is remarkable.

—THE second meeting of the WIMBLEDON GARDENERS' SOCIETY was held on the evening of the 1st inst., and it must have been very gratifying to the promoters to find so large an attendance, sixty-six members and friends being present. The chair was taken by Mr. J. Ollerhead, the originator of the Society, who announced that the prospects of the Society were very encouraging. The result of the appeal to the gentry of the neighbourhood and others had been so far successful that a sum of about £40 had been given in money, and several gentlemen had made contributions of useful books. A discussion on the "Fallacies of Fruit Culture" concluded the meeting.

—WE have received from Henry Webb, Esq., of Redstone Manor House, Redhill, a truss of bloom of CHINESE PARNASSIA, in which the corolla is perfectly green, and the large inflated calyx is as long as the corolla. It is a singular-looking plant.

—FOR affording dazzling spikes of out bloom during the dark months of the year few plants are superior to *ALONSOA WARCSEWICZII*. We have lately seen a very fine form of this plant cultivated at Denbies. The flowers are of the richest velvety scarlet, and are produced in great profusion. The plant is of the easiest culture, few plants striking more freely and requiring less skill in culture. Mr. Beesley has great demands for out flowers, and this is one of his favourite winter plants, the colour of the flowers being unusually bright and continue fresh for a long time in a cut state. The plants are grown in a light place in a warm greenhouse.

—THE following modes of making RUST CEMENT for water and steam pipes have been recommended by the "Engineer." Make a stiff paste with two parts sal-ammoniac, thirty-five parts iron borings, one part sulphur and water, and drive it into the joint with a chisel; or, to two parts of sal-ammoniac and one part of flowers of sulphur add sixty parts of iron chips, and mix the whole with water to which one-sixth part vinegar or a little sulphuric acid is added. Another cement is made by mixing one hundred parts of bright iron filings or fine chips or borings with one part powdered sal-ammoniac, and moistening with urine; when thus prepared, force it into the joint. It will prove serviceable under the action of fire. All the above parts are by weight.

COCKNEY CATERPILLARS.

A FINE illustrative chapter on the subject of "perseverance under difficulties" might be taken from the experience of many London amateur gardeners who work early and late at their small garden plots in spite of failures and disappointments. Just now as one goes through the suburbs one may see them digging and clearing the ground with a hearty determination to make the best of it, which is really encouraging, as showing how deep down in humanity lies the love of flowers. Even the poor apologies for flowers that are coaxed into spasmodic life in the smokier foggy districts are the sources of pleasure to men, women, and children; their very weakness in some instances increases the owner's affection for them.

Caterpillars are apt to prove a sore trial to the cultivators of the small suburban front and back gardens. The circumstance is open to a variety of explanations, but it is beyond denial that gardens near London, say within a distance of five or six miles from its centre, are much more pestered in this way than are gardens elsewhere. It may be that in some species, as is known to be the case with certain quadrupeds and birds, there exists a natural liking for the habitations of

man, which draws them about such a buzzing hive of humanity as is London. Or, again, it may be argued that these particular species thrive better in the warmer temperature near a great city than they do in the open country. I believe there is much in the fact that caterpillars near London concentrate themselves more, owing to the limited area in some districts, and also several species which multiply rapidly do in the suburbs confine their attacks to garden plants which, under other circumstances, would consume a greater variety of vegetable food. Take the familiar caterpillar of the Gooseberry moth as example. The caterpillar of this is, I think, nowhere such a pest to Gooseberry and Currant bushes as it is in suburban gardens. And why? Because in the country the moths fly hither and thither, depositing their eggs in a number of shrubs or trees growing in the woods and along the hedges. You may pick the caterpillars of *Abraxas grossulariata* off Oak, Hazel, Sloe, and Willow, and necessarily the gardens in the vicinity come off lightly.

Just however to reckon up the species that deserve especially to be styled "cockney" by their swarming in the neighbourhood of London, I note first the caterpillars of the common white butterflies, *Pieris* *Brassicae* and *Rape*. Not a patch of Cabbages can be planted which does not entice the settlement of one or other of these butterflies upon it; for the two species, I think *P. Rape* appears most numerous. They attack, of course, other Brassicaceous or Cruciferous plants, *P. Brassicae* frequently making havoc in beds of the *Nasturtium*. These alone of all the British butterflies feed up close to London, though stragglers of various species occasionally fly along London streets and roads. The Currant Clearwing (*Seisia tipuliformis*) comes on our list, for its caterpillar busily mines the Currant bushes in our western suburbs, and its large relatives, the Leopard Moth and the Goat (*Zenzera Eaculi* and *Cossus Ligniperda*) destroy branches and even trees in the London parks and squares. The brother Ermine Moths, *Aretia Menthastris* and *lubricipeda*, sneak about suburban gardens, the latter being rather the commoner. Both, from their hairy garb, enjoy the epithet, "Woolly Bear," applied indiscriminately to caterpillars thus clothed, and both are hearty eaters. A *lubricipeda* is remarkable for its habit when journeying of suddenly pausing as if to reflect, and then rushing on at a tremendous rate, so that few caterpillars could race with it successfully. The smaller and more variegated caterpillar of the Vapourer Moth (*Orgyia antiqua*) feeds on almost everything in the garden; it is presumed to be the only species of the order that still holds ground in the heart of London, feeding on Elms and Limes in melancholy city churchyards.

The Gooseberry Moth I have mentioned, and I next name the large "Looper" caterpillar of the Brindled Beauty (*Biston hirtaria*), far from beautiful in the eyes of gardeners, since it feeds not only on Elm and Lime, but also on Plum and Pear trees. The moths may be picked by dozens off the bark of trees in April, and the caterpillars leave tokens of their presence on the pavements whenever they happen to be located in trees near the footway, the "frass" that falls leaving a deep stain on the stones. A similar effect is produced by the feeding of the caterpillars of the Buff-tip (*Phalera Bucephala*) abundant in like circumstances, only these caterpillars rarely meddle with fruit trees. The dingy moth known by the inaccurate name of the Willow Beauty (*Boarmia perfumaria*), which some one suggested should be called the "Marylebone Moth," because it was many years ago apparently commoner in that district of London than anywhere else, sits visible enough on walls during the day, though the caterpillar, an Ivy-eater, is retired in its habits and seldom seen.

The ubiquitous Winter Moth (*Cheimatobia brumata*) conspires with the smaller and more lovely little Ermine (*Hyponomeuta padella*) to strip the foliage off the Hawthorns that grow in the neighbourhood of London; the caterpillar of the former species being by choice solitary and spinning its web unaided, that of the latter uniting with its brethren to form a social web. In some counties *C. brumata* has greatly infested Apple and Pear trees, which I have not observed near London, though several of my friends have shown me trees woefully disfigured by *H. padella*. The slim "Looper" caterpillar of the Garden Carpet (*Melantheria fluctuata*), a caterpillar which appears in a variety of colours, feeds chiefly on low plants in gardens, and does double mischief from the fact that it is double-brooded. The moth may be noticed flying about all the summer, even in the daytime. Rather general in its tastes is the hairy, one-humped caterpillar of the Grey Dagger Moth (*Acronycta Psi*), which may be observed feeding on

trees and shrubs about London till the leaves are nearly gone. This might do some mischief were it not that every season a good proportion of the brood is killed by the attacks of parasitic foes.

Amongst the smooth-bodied caterpillars of the Noctua division are some that evidently delight in a London life, such as that of the variable Cabbage Moth (*Mamestra Brassicae*), more especially troublesome in the kitchen garden; the Dot (*M. Pernicaria*), which prefers the flower beds and shrubberies; the Garden Dart (*Agrotis nigricans*); and the Great Yellow Underwing (*Trypocena pronuba*). The Gothic (*Noctia typica*) is plentiful in some years, scarce in others, the caterpillar having the peculiar habit of preferring trees or shrubs in autumn, and low-growing plants after its hibernation. Add to these the caterpillar of the showy Silver Y (*Plusia Gamma*), fond of an excursion in the sunshine, and that of the sluggish Anglehades (*Phlogophora meticulosa*), a caterpillar, however, less common in gardens than formerly, and we have a pretty formidable list of possible enemies from one order of insects alone, which vex the soul of the suburban amateur; and this is, moreover, one in which are not specified sundry smaller species of the Tortrix and Tinea sort, which are also capable of much mischief.—J. R. S. C.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

THE work in this department is well forward, there being but little to do except the sowing and planting of successional crops. When the quarters are dug or trenched during the winter all that is required at the time of cropping is to fork over the ground lightly; and if this is done on a fine drying day the seeds can be sown immediately after.

We have again planted Windsor Beans. This is the only variety used in the kitchen here; and although it is not so prolific as the long-podded sorts it is much better for the table. Those who intend to grow for exhibition will find the Seville Long Pod to be the best. We have made a sowing of this with the Windsor for comparison.

Another sowing of Peas has been made. We have already named the most desirable sorts to sow, but with many it is much a matter of taste, Laxton's Fillbasket being by some preferred to the Wrinkled Marrows. When a blue Pea is intended to be sown, not a Marrow, there is at present nothing equal to Fillbasket. It is of moderate growth, and bears an enormous crop of very fine pods. Standard, another of Mr. Laxton's cross-breeds, is said to be quite as prolific as Fillbasket but is a Wrinkled Marrow; this sort will be tried against the best of the old Marrows this season. The earliest crop is making rapid progress; the rows will in a few days require to have sticks placed to them. It is an advantage to place short sprays first at this season, and when the young Peas have gained the top of them to place the usual sticks. If the long sticks are put in at once they shade the Peas very much and retard them.

It is a good time to plant Globe Artichokes; there are several varieties, and it is as well to obtain a good selection at the first; the large Globe is the best. This is a vegetable which if it is planted on good deeply trenched ground gives but little trouble afterwards. The heads are also very useful for showing in a collection of vegetables in the month of June. The plants are usually surrounded with littery manure during winter; the rougher portion of it is now removed and the remainder dug-in. During this operation offsets or suckers may be obtained for planting-out. The plants should be grown 4 feet apart in the rows and 8 feet from plant to plant. Jerusalem Artichokes are generally planted in some out-of-the-way corner, but where this vegetable is esteemed a plot of good ground should be chosen; it should be deeply dug and well manured. The rows should be 8 feet 6 inches apart and the sets a foot apart.

Parsley may now be sown. A row at the back of a fruit border or as an edging to some of the kitchen-garden quarters is a good position for it. Spinach we generally sow between the rows of Peas; the round-seeded sort is the best for this season.

Brussels Sprouts and Savoys are important crops. We have very great difficulty to get either of them to grow through the season free from the attacks of the maggot that causes club roots. Some persons have recommended to replant frequently when the plants are young; but we never had the Sprouts better than they have been this season, and the plants were sown in drills and thinned out to the required distance without having been transplanted from the seed bed. It is too early to sow Savoys yet unless they are wanted for the end of August and through September. April will be early enough to sow for the winter supply.

About the end of April is early enough to sow the general crop of Beet, but a sowing may be made at once if it is required early.

The ground should be in good condition, and if possible dry at the time of sowing for this crop. Leeks should be sown at once if it is intended that they should grow to a large size, nor should the ground on which it is intended to plant them have been cropped previously. A small patch may be sown in a sheltered position, yet in one pretty fully exposed to light and air. The Leek is a gross feeder, and delights in plenty of rich moist manure. Sow a little Chervil seed on a sheltered border. Basil had better be sown in pots, and the pots be plunged in a slight hotbed. When the plants are large enough to prick-out, they should again be planted in pots to be put out in the open ground in a small bed of light soil in May. Attention must be given to sow small salads, such as Mustard, Cress, Radish, &c., almost weekly if a large supply is required. Thyme, Mint, and what are usually called pot-herbs that are perennial should now be planted-out. Most of them are propagated by division of the roots. We have planted-out Cauliflower plants that have been sheltered in a cold frame during the winter. The seeds sown on a hotbed will succeed them.

PINERIES.

Our fruiting and succession houses are still so full of plants that we have not had an opportunity to report the suckers that were put in some time in August last year. To have large plants for fruiting very early in 1877 their potting should now be done. The Pine is a very easily-grown plant, indeed there is very little trouble to grow the plants to a large size; but this is not exactly the object cultivators have in view. Moderately strong plants generally give the largest fruit. If the loam used is of a light sandy nature the plants grow to the largest size, and the whole mass of mould in the pots is thoroughly matted with roots before the fruit throws up, and is in such an exhausted condition that the pips seldom swell to a good size. This is not the case when the loam is of a heavy clayey nature. The top spit cut not more than 8 inches deep from an old pasture contains much fibre, which will keep the compost open even if it does contain much clay. When the loam has been rather heavy we have used a little leaf mould with it, and one part of decayed stable manure to five of the loam. Bone dust is also well adapted for mixing with the soil. The compost must also be rammed-in firmly. A loose potting material causes the plant to shake about in the pot, and if it is loose at the neck it seldom gives good fruit. At present the temperature can be kept up to 75° at night if it is desirable to hurry on the fruit for a purpose, though the fruit produced in a temperature of from 65° to 70° will be of better flavour, and will not be likely to have overgrown crowns.

VINES IN POTS.

We do not grow Vines for fruiting in pots now that the houses are in full bearing, but a few pot Vines are of great value to those who have young Vines planted and which are not yet in a bearing state. There is no difficulty whatever in growing fruiting canes the first season from eyes put in from the middle of January to the middle of February. It is best to put in the eyes singly in small pots. They will soon start in a little bottom heat, and when the roots have reached the sides of the pots shift them into larger pots. It is quite necessary that they be grown on without any check. By August the Vines will be in their fruiting pots; the strongest in 18-inch, and those of more moderate growth in 11-inch pots.

Figs in pots are now making rapid growth. They require to be freely syringed and supplied with plenty of water at the roots without overdoing it. Red spider attacks the leaves, causing them to become yellow. The water ought to be syringed on to the under sides of the leaves.

Orchard-house trees are now rapidly approaching the blooming period. We are careful to keep the soil in the pots of Peach and Nectarine trees sufficiently moist, but the roots must become pretty dry before they receive water. The house has been fumigated with tobacco smoke to destroy any aphids that may be upon the trees. Pear and Plum trees have not yet been removed into the house; they will be taken in as soon as possible. The flower buds are far advanced.

FLOWER GARDEN.

The borders are now becoming gay with spring flowers. Snowdrops and Crocuses are fading, but Primroses, Cowslips, Polyanthes, and the more refined Auriculas will take their place. Iris reticulata is also very beautiful, and the different species and varieties of Hepatica are now in full beauty. *H. angulosa* is an excellent species, but the plants have evidently been raised from seeds, as there is considerable variation amongst them. Some are very pale blue with small flowers, others have brighter-coloured flowers as large as a half-crown. Scillas are also in flower. These charming deep blue flowers are always attractive; but the brightest jewels may be spoiled by being badly set, so our lovely spring flowers show to the best advantage when the borders, walks, and lawn are kept neat and clean. The wet weather has caused the worms to work on the lawn. To crush the casts down a heavy roller has been run over it, and in a few days the lawn-mowers will also be brought out. The grass is coming uneven, as it generally does until after the first mowing.

Auriculas in frames are throwing up strong trusses. We look

over the plants about once a-week to remove mouldy leaves, and as yet the plants do not require water oftener than this. The frames are aired pretty freely, but the plants are not exposed to high winds.

Carnations and Picotees have not made much spring growth as yet. The frames are aired even more freely than the Auriculas; in fine weather the lights are removed altogether. The potting material has been made ready. The loam was mixed with half-rotted manure two months ago; to this has now been added leaf mould and sand; river sand is the best. The plants will be potted as time permits. The end of March or even early in April is time enough. The best growers pot two plants in a 10-inch pot. The object of using pots this size is not altogether for the sake of producing large flowers, but to have plenty of room to layer the grass when the blooming period is over. It is quite as well to place the pots back into cold frames after repotting; but if this cannot be done, and it is necessary to place them out of doors, we would then rather delay the potting until the first or even the second week in April. The hoe has been run through Pink beds to loosen the soil, so that atmospheric influences may have more effect upon it.

Bedding plants are now being potted-off from the cutting pots. Some of them have been planted in shallow boxes. Zonal Pelargoniums and others of a similar hardy nature are still in heated pits or late vineries; they will very soon be placed out of doors in turf pits and be sheltered from frosts by canvas shading.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

BRISTOL (Spring Show). March 22nd and 23rd. Mr. G. Webley, Holm Wood, Westbury-upon-Trym, Hon. Sec.
GLASGOW. March 29th, May 10th, and September 12th and 13th. Mr. F. Gilh. Doughall, 167, Canning Street, Sec.
ROYAL CALEDONIAN HORTICULTURAL SOCIETY. Shows April 5th, July 5th, and September 18th.
WESTMINSTER AQUARIUM. April 12th and 13th, May 10th and 11th, May 30th and 31st, July 5th and 6th.
TIVERTON. May 24th and 25th. Messrs. A. Payne and J. Mills, Hon. Secs.
MANCHESTER (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.
SOUTHEAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fudge, 39, York Street, Sec.
MAIDSTONE (Roses). June 21st. Mr. Hubert Bensted, Roekstow, Maidstone, Sec.
SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.
BRIGATS (Roses). June 24th. Mr. J. Payne, Treasurer.
LEEDS. June 28th, 29th, and 30th. Mr. James Birkbeck, Delph Lane, Woodhouse, Leeds, Sec.
RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.
FROME (Roses). June 29th. Mr. A. R. Bally, Hon. Sec.
SOUTHPORT. July 5th, 6th, 7th, and 8th. Mr. E. Martin, Sec.
HELENBURGH (Roses). July 12th and 13th. Mr. J. Mitchell, Sec.
WIMBLEDON. July 12th and 13th. Mr. P. Appleby, 6, Linden Cottages, Hon. Sec.
KILMARNOCK. Roses, July 13th and 19th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.

TRADE CATALOGUES RECEIVED.

J. Coombs, The Ferns, Enfield, Middlesex.—*Catalogue of Cuttings of Geraniums, Chrysanthemums, &c.*
 Francis & Arthur Dickson & Sons, 106, Eastgate Street, Chester.—*Catalogue of New and Select Farm Seeds.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

BOOKS (*Delta*).—London's edition of Repton's "Landscape Gardening" will suit you. We do not know the price.

BACK NUMBERS (*A. R. Middlesex*).—You can have those you mention if you enclose 3d., and the "Year-Book" if you enclose 1s. 3d. They will be sent free by post if you restate what you need, and your full direction.

PRICES OF VOLUMES VII. and VIII. OF THE JOURNAL OF HORTICULTURE (*B. K. L.*).—The price is 6s. each.

SEAWEED ON ASPARAGUS BED (*J. W. L.*).—The seaweed will not injure the plants. Point it in with a fork about the middle of the present month, not so deeply as to injure the crowns.

AZALEAS GROWING BEFORE FLOWERING (*Idem*).—It is not unusual for vigorous plants to start into growth before flowering, and is more prevalent in some kinds than in others. It usually arises from the wood not being well ripened, the buds not well developed from the late vigorous growth of the preceding year. The plants occasionally develop the flower buds along with the new shoots being made, and not unfrequently the flower buds do not expand, but become as you say blind. We cannot account for the ends of the leaves being browned except from syringing, the water hanging from the points when the sun fell powerfully upon them. Keane's

"Indoor Gardening" is a useful book for those who have glass structures, and our "Greenhouse" Manual treats of the culture of Azaleas. Post free for 1s. 7½d. and 10d. respectively.

TUBS FOR ORANGE TREES (*H. S.*).—Charring the inside is to be much preferred to either painting it or pitching it.

BEST BEDDING GERANIUMS (*A. B. C.*).—*Deep lilac pink* are Amaranth and Florence Durand. *Deep rich pink*: Mrs. Holden, Conlessa Quarto, and Mrs. Fytche. *Light pink*: Mrs. Lowe. *Rose shade*: Rose Bradwardine.

GLADIATORIA HERBA (*E. T. M. W.*).—No classic author mentions a plant by that name. We think it must be applicable to any plant with sword-shaped leaves, such as the Iris and Gladiolus.

VINE SHOOT (*Z. A. B.*).—The brown is natural. We detect nothing wrong.

GREENHOUSE SHADING (*Oilbo*).—If you only require a temporary shade, the best is a roller shade of No. 3 tiffany or floral shading, and it can be raised or lowered at pleasure. It is only from powerful sun that you will require shade for a majority of flowering plants, but Azaleas, Camellias, &c., require permanent shade in summer, and in that case you may paint the interior surface of the glass with a wash formed of whiting brought to the consistence of thin whitewash with skimmed milk.

PROPAGATING CLEMATIS AND PASSIFLORA (*H. B. B.*).—Take the young shoots of both when they are about 4 inches long with a heel of the old wood, making choice of the stubby side shoots, or better those which come from the root, and insert in sandy soil, placing in a bottom heat of 75°, keeping moist, and shaded from bright sun.

PLANTS FOR CONSERVATORY (*H. C.*).—You could not have anything better for the back wall than Camellias, the border being too narrow for Camellias as bushes or pyramids, and they would spoil the wall for climbers. Clematises are not good permanent climbers, but grown in pots and trained on trellises are very fine for conservatory decoration. *Luculia gratissima* and *Habrothamnus fascicularis* are fine wall plants, but we should cover the wall with Camellias. For the pillars, *Kennedy bimaucata variegata*, *Rhynchospermum jasmynoides*, *Sollya linearis*, and *Jasminum gracile* are suitable.

HELIOTROPE FOR WINTER-FLOWERING (*An Old Subscriber*).—To flower in winter it is necessary that the plants have a genial temperature of 50° to 55°, the plants being grown-on through the summer and kept from flowering during that period. Without a stove or forcing house your supply of flowers in winter, especially of plants for table decoration, must be limited. The mildew is due to too close, cold, and moist an atmosphere. We should have a house for furnishing winter flowers and plants.

SEED-SAVING OF CYCAMEN PERVIUM (*Stourton*).—Impregnate the flowers with a camel's-hair pencil, and keep the plants in a light airy position, daily supplied with water until the seed is ripe, examining the pods daily when they approach maturity, so as to gather them before the seeds are shed. The plants will do well in a light airy position in a greenhouse, or one moderately shaded.

DESTROYING WOOLLYS (*Idem*).—Place a little hay against the wall, and in and beneath the hay the vermin will hide, upon which in the morning may be poured boiling water. The woollys may be enticed by a boiled potato to places where the pouring of boiling water upon them would not do harm to plants.

SOWING GRASS SEEDS, &c. (*P. M.*).—Pampas Grass, Quaking Grass, Feather Grass, Mink, French Marigold, and dwarf Mimulus require to be sown in a compost of turfy loam and leaf soil, and placed in a gentle hotbed; the seedlings to be pricked off when large enough to handle, and planted out, after being hardened off, where they are to remain. The treatment of no less than six plants are asked for at once, and no particulars of the purpose for which they are required is given. It may be that some of them are required to be grown in pots.

SOIL FOR ARAUCARIA IMBRICATA (*Youthful Amateur*).—It prefers a rather strong deep loam, and to promote free growth a little leaf soil may be added. No stones for drainage are necessary, the ground being free from stagnant water by efficient drains 4 feet deep, having efficient outlets.

CULTURE OF SELAGNELLA MARTENI (*Idem*).—We pot ours in rather fibrous peat, with an admixture of silver sand, affording good drainage, and grow them in a warm greenhouse or cool stove temperature, keeping moist and shading from bright sun. Probably your plants will thrive after the potting is recovered from.

EUPHORIA BUTCHERI (*Idem*).—We do not know any plant by the name; but *E. splendens* is a stove plant, and a very useful one, flowering in the spring and early summer months.

CHRYSAETHYMUMS NOT THRIVING (*J. H.*).—We do not think there is anything amiss, only the plants are late, the tendency being in such a case to throw out lateral growths instead of flowering. The only remedy is to take cuttings in November, or as early as they can be had, and winter in a house free from frost, shifting into larger pots as they fill with roots, giving the shift into the blooming pots early in June, so as to have the plants strong and the bloom well advanced before autumn, removing to a light airy house for flowering. The worms will not occasion the evil complained of.

PLANTS FOR COLD GREENHOUSE (*An Old Subscriber*).—We should devote the house to Tree-scented Roses, covering the ends and the wall with the frost-growing kinds. It would, we think, be the best use to which you could put such a house, especially as you can only attend to it during mornings and evenings.

WINTER CUCUMBERS FAILING (*Inquirer*).—In the absence of data we are unable to account for the failure of the Cucumbers, but we presume you can command a bottom heat of 75° and a top heat of 65° at night, and 70° to 75° by day in any weather, and in such case you will be able to have fruit fit to eat in February by seed sown in early September. The other side of the house may be utilised for the growth of Tomatoes and French Beans.

CAMELLIAS AND AZALEAS FOR EARLY FLOWERING (*A Subscriber*).—Repot them if required after flowering, and place in a house with a night temperature of 55° to 60°, and 65° to 75° by day, with a rise from sun heat to 80° or 85°, and free ventilation, maintaining a moist atmosphere and shading from bright sun, continuing in heat until the buds are well set, when the plants should be removed to a cool and airy house, and if introduced to gentle heat in autumn they will flower at an early period. A Cucumber house will be too hot for the plants to be placed in to make growth.

PLANTING HOLLY HEDGES (*F. Appleby*).—Plant during moist weather in April, moving with balls of earth if possible, and watering if dry weather follow.

PINK APPLES WITH TALL CROWNS (X. X.).—A chief cause is too close and moist an atmosphere with a want of light for the plants, they being at too great a distance from the glass and too crowded in the bed. Give them more room, so as to induce a stiff sturdy growth, admitting air freely. You may require both top and front ventilation, but the latter is not to be used except to keep the temperature from rising too high. Your plants have too much bottom heat by 20°, whilst the top heat is too little, which will enable you to give but little air, and the plants from the close atmosphere will be tall and weak. 85° to 90° is a proper bottom heat.

STARTING AMARYLLISES TO FLOWER IN JUNE (W. W.).—Repot the plants and place them in heat at the close of the present month, affording bottom heat so as to have a good root action by the time the plants start into growth. You will need to use some judgment in having the plants in flower at the proper time, retarding, if likely to be too early, by keeping them in a lower temperature, or forwarding in a higher if not coming on quickly enough; but a rather slow steady growth will give you the finest flowers.

STOPPING ALLAMANDAS (Idem).—Do not stop them, but allow them to grow, unless the plants are badly furnished, when they may be stopped to induce the production of more shoots. If stopped it should be done at once, but we do not advise it unless absolutely necessary. The same remarks apply to these as to the Amaryllises in retarding or forwarding the bloom as may be necessary.

EARLY-FLOWERING RHODODENDRONS (W. G. C.).—*Scarlet*: Grand Arab, Altalarensis, and Igneusens. *White*: Blanc Superb, Empress Eugénie, and Gloire de Gand. *Pink*: Varium, Limbatum, and Sir Walter Scott. Besides these you might take dauricum, yielding a succession of its pale purple or mauve-coloured flowers from January to May, with the brighter purple dauricum atrovirens flowering at the same time, caucasicum opening its pretty pale pink trusses in April, the rosy crimson Broughtoni, and the bright scarlet Soleil d'Australis. Most of the varieties of catawbiense may also take rank as early kinds. They range through many shades of colour, such as white, lilac, bluish, rose, crimson, and purple.

OLD PASTURE FIELD FOR HAY (Ardentist).—There is nothing to prevent your having a good crop of hay from a field that has been several years used as a pasture; but as you say it is rather uneven, it would be better to lower some of the little hillocks as soon as possible, especially if it be intended to use the hay-cutting machine at the proper cutting time. It would also no doubt improve the crop a good deal if the field had a dressing of manure or compost free from stones, as the latter would have to be poked off before the grass started to grow much. The fact of the grass being coarse is more likely to arise from frequent mowing than from being fed off, as the latter, especially if fed off with sheep, tends to improve the character of the herbage. A friend of ours who had a field much over-run with the Ox-eye Daisy—which, although a pretty object in itself, is very offensive amongst hay—after trying various means to extirpate it by digging-up, &c., had the field closely fed off with sheep one year, and all but completely extirpated the pest. We may, however, remark that where sheep are grazed along with cows and other cattle, it is not so well for the latter; the sheep, eating so much closer to the ground than the cattle can do, get all the finest grass. If the land be good and the season a favourable one you may confidently expect a good crop of hay that has been pasture for so many years, provided it has justice done it, and nothing turned out upon it after the 1st of March.

BARBE DE CAPUCIN (J. E. B.).—It is only the common Chloery bleached. The mode of culture is in all gardening dictionaries. The yellow-bellied flower is *Acacia dealbata*.

FLOWER GARDEN (R. Holsam).—No one can direct how to plant a garden which he has not seen. All we undertake is to advise proposed planting.

FOWLS' DUNG (J. W. S.).—It, like all other excrementitious manures, may be applied beneficially to any outdoor growing plant. To your Roses you may apply it; but in what quantity must depend upon whether your bushes are weakly or vigorous.

ROSES ON OWN ROOTS.—A correspondent, G. W. Jessop, would be obliged by "E. B. P." naming the Roses that do not succeed on their own roots.

WINTER SPRINACH (K. V.).—Stir up the soil with a knife on each side of the row, to ascertain if grubs are preying on the roots.

ROSES GRAFTED ON BRIAR ROOTS (E. K. L.).—The Roses grafted on Briar roots in a cold frame 6 inches apart, we should harden well off by the middle of May, and then lift very carefully, and transfer to pots if you wish them for pot culture, shading for a time until established, or plant out at more than double the distance they are apart in the bed, and four times the distance between the rows. If shaded and duly watered they will soon recover the removal. If left in the cold frame until autumn they will be injured by growing too closely together.

SOWING PEAS FOR SUCCESSION (A. D.).—William I. and Alpha should be sown at once, they will succeed each other; following with Nelson's Vanguard early in April, Champion of England the third week in April, Maclean's Best of All the first week in May, Vetch's Perfection the third week in that month, G. F. Wilson the first week in June, and Omega in the third week of that month; you will be likely to have a good succession, but we should add another sowing of No Plus Ultra the first week in July.

LABOUR REQUIRED FOR GARDEN (Wishing Right).—For the two acres of garden, one acre of kitchen garden, an acre of pleasure ground, and a quarter of an acre of bedding-out, with greenhouse and three frames, a gardener, a labourer or assistant gardener, and a boy or woman in summer, would be sufficient to keep it in good order and high cultivation.

DESTROYING ANTS IN HOTHOUSE (M. F. W.).—Place honey in saucers in places which the ants frequent, removing after a few days, and then mix arsenic with honey, again placing it in their haunts, but be careful to keep it from doing injury otherwise than to the ants.

SOIL FOR CAMELLIAS (Idem).—We use a compost of three parts very fibrous light loam, the top inch of a pasture where the soil is a rich sandy loam chopped-up rather finely, with a fourth part of sandy peat. For large plants the peat is omitted, and we top-dress with dried cowdung.

GERANIUM LEAVES INJURED (Edgbaston).—The leaves are injured by some noxious vapour, probably the fumes escaping from the stove or its chimney or smoke-pipe, or the fire may have had its surface overheated.

NEW MODE OF GROWING GRAPES (A. A.).—We regret we have no recollection of your letter, or that which you refer to. When we receive further notes on the mode they will be published.

DESTROYING MOLES (R. H. A.).—Trapping is the best means of riddance. It is said that the Dwarf Elder (*Sambucus ebulus*) leaves placed in their

runs will drive them away, as also the leaves of the common Elder (*S. nigra*), they being used in a fresh state. But these only drive them to make a fresh burrow. A correspondent in the *New York Tribune* states that he has completely banished the moles from his corn fields, &c., his "method being to first soak some corn in water, pour the water off and stir-in some strychnine. Drop in some grains in the runs of the moles, and soon the corn will be missed and the moles too."

NAMES OF FRUITS (Ducker & Son).—Downton Pippin. (*Connaught Subscriber*).—1 and 8, Not known; 2, Brabant Bellefleur. (*J. P. Eldaire*).—Fondante de Charnes.

NAMES OF PLANTS (Constant Reader).—1, a *Fourcroya*, apparently; 2, *Salvia coccinea*. (*A Subscriber*).—1, *Asplenium fasciculatum*, Forst.; 2, *Pteris flabellata*, Thunb.; 3, *Nephrodium molle*, Desv.; 4, *Asplenium bulbiferum*, Forst.; 5, *Aspidium falcatum* probably, but cannot say without fruit; 6, *Oncidium japonicum*.

POULTRY, BEE, AND PIGEON CHRONICLE.

DUBBING GAME COOKS.

I do not think "SURREY PARSON" can have kept Game fowls, or he would never call dubbing senseless. It is impossible always to provide a run for each cock, and unless that is done you cannot be sure that the two will never fight. I should have lost valuable birds before now had they not been dubbed. Fortunately, being so, they have only been brought to me in a shocking mess, from which they have recovered in about a week. Like "Fitz," I should dub if I never exhibited. If Mr. Crook is sure that we dub our birds in order to qualify them for the pit he can strike the most effectual blow at the practice by getting up prizes for "stilly" birds. Whenever there has been trouble in my poultry yards I have always found the shorter-legged birds had the best of it.

I very much doubt if the Crystal Palace Show would succeed in abolishing dubbing by following "SURREY PARSON'S" advice; they would be more likely to abolish their Game entries. I have the honour to be acquainted with a considerable number of Game breeders, and I think I may say that there is a growing feeling amongst them that Game fowls, as a rule, do not have enough time given to the judging of these classes. If the Palace, then, was alone in insisting upon undubbed birds they would get few entries. If other shows followed their example I believe it would simply end in Game breeders getting up their own shows.

I fear "WILTSHIRE RECTOR" mistakes a postulate for an axiom when he says, "Let it be clearly understood that apologies for dubbing are in reality apologies for cock-fighting. Stamp out the one you stamp out the other." He begs the whole question. I deny the first sentence, and I daresay experience would prove the fallacy of the second. I have no doubt that my Game cocks, were I to let them try, would bring their quarrels to a conclusion as soon as other breeds, but without their combs and wattles they are much less likely to be disfigured and injured than with them, and I am therefore thankful for a custom which renders their accidental *encontres* much less injurious than they would otherwise be.

As for talking about the cruelty of dubbing, it really is rather "straining at a gnat and swallowing a camel" when we pride ourselves on our hunting, fishing, coursing, and shooting.—F. G. DUTTON.

THE ALMOND TUMBLER.

[We extract the following from the address of O. Merck, Esq., President of the National Peristeronic Society.]

I would advise those gentlemen who have had little or no experience in this particular variety not to be over-sanguine of reaching the goal of perfection without great care and patience. Their best judgment is needed in crossing the hard and soft-feathered Almonds, the Splashes, the Whole-Feathered, the Agates, and the Kites, all of these being at times necessary to produce a properly marked bird. Now, let me call the attention of our younger members to this fact, that to breed an Almond Pigeon is one thing, and to breed an Almond Tumbler Pigeon is quite another thing. The plumage constitutes the first, which is pretty well known to most of you. The ground colour of the bird should be of a soft yet bright tint, similar to the almond nut-shell, evenly broken all over with black of the jettest colour; on the head there should be fine stencillings gradually increasing in quantity and size as the hackle is approached, there assuming a rich metallic lustre; on the body they should become larger, and give the feather that spangled appearance which is so characteristic of an Almond. The more positive and marked the spangles are, the handsomer it will prove. The flight and tail feathers should each be marked with three colours—viz., almond, black, and white, these as distinct and varied as possible, by which I mean they should not be cut as it were by a bar uniformly across them. So much for this property of feather, and as the bird unquestionably derives its title from it, I have always considered and still maintain that this is its first and chief property; but whether the bird be then

an Almond Tumbler or simply an Almond Pigeon depends on a variety of other properties. Let us examine the Tumbler pure and simple. Good shape and carriage are imperative. It should be small, but round and compact, with a broad full chest, holding its head proudly erect, sufficiently inclined backward to produce a slight curve in the neck, and drooping its wings gracefully. The head should be broad and high in the skull, yet at the same time round; without this it loses, to my mind, half its beauty. The eye should be as central as possible, by that I mean not too forward, neither too high; it should be of a pearl white colour, rather projecting than depressed, the pupil being very sharply and clearly defined. The beak should be short, but by no means thick or boxy; it should be light in colour and project at right angles from the forehead, neither inclining upwards or downwards. The legs should be short, but not clumsy, and the feet small.

As I before mentioned, neither a bird possessing the feather without the Tumbler properties, nor one possessing the latter without the former, can claim to be designated an Almond Tumbler; it must possess both, and the more these points are developed the greater perfection it attains.

NORTHAMPTON SHOW OF POULTRY, &c.

THIS Meeting fell this year on Ash-Wednesday and the following day, as it is held always in the first week of March; but the birds seemed to resent, or their owners did, this day being turned to such a mundane purpose as a poultry show, for the birds did not muster quite as strongly in numbers as in other years. The quality, however, was admirable and the arrangements all good. Messrs. Hewitt and Tebbay awarded the prizes, and their awards were very satisfactorily received.

In *Dorking* hens a very fine hen was first, being of good colour and fair in feet. The ladies here were better than the gentlemen. *Cochins* were a marvellously fine lot. In *Buffs* a beautiful old cock won first, of good colour and massive in shape. The first hen was a well-shaped bird and large. *Partridges* were a good lot. The first old cock was deep in body and good in colour; the second large and closely pressing on the first. Hens were remarkably good and the winners beautiful in penolling. Mr. Darby's cock in class 51 was a fine Black, and deserved a card of some kind. The Whites were very good. The second cock, which we learn made his debut here, was in some respects better than the first, but it was a near run, and they are as good too White birds as we have seen for a long time. The first-prize hen was a beautiful bird for shape and colour; second rather coarse; third an immense and large-bodied hen, but rather under leg-feathered. In *Light Brahmas* the winning cock deserved his place. We have often commented on him before; but the second was near upon him this time. In hens the "old lady of curling-tongue" was first. It is a pity her feathers are so curled, for she in other respects is matchless. Second another good hen. Third a nice pullet with a pretty head and neck. Dark cocks actually made only five entries. Mr. Lingwood must be sleeping. Mr. Ansdell must be dreaming. Where are the D. B. fanciers gone to? Have they no birds which they are not breeding from to send to the Lenten carnival? The Dark hens were a fair trio in the prize pens; one made up in what another wanted, and so the pick was pretty well made. *Malays* were not as they have been of late: they ebb and flow like a tide, and more so than any other breed we know. The winning cockerel was very bright and hard in feather; second a little larger, but not so close or brilliant. Hens were all a little too small. In *Houdans* the first hen was a perfect bird. In the next French class *Crêves* mustered well. It made us feel quite sad to see the name in the catalogue of that old friend of ours, who since the entries were closed has gone to his last home. Many times have we criticised his birds in these his favourite pages, and we can only hope that his superb stock of birds will yet remain in the family. The first *Crève* cock was certainly crooked in tail or else he purposely carried it on one side to annoy us, for we tried very hard to catch him with his caudal appendage in the proper line. *Game* and *Hamburgs* made good classes, but we were startled by nothing, and many of them are old favourites which have been noticed here before. In the Variety class we were glad to see Brown Leghorns and Silkies in the prize list. The former was quite a pretty bird and as neat as we have seen for a long time. What a pity he was not at Bournemouth a week back to win the first prize there, which had to go a-begging. In *Polands* good Golds were first and second, and a neat Silver third in cocks, while in hens Golds won all the prizes. 361 (Messrs. Silvester) was also a good hen, but she seemed a little untidy-looking. *Game Bantams* were remarkable for the Black Reds, which were certainly very good. The Brown Red hens were only three pens in numbers, but first and second nice birds. Good Duckings for colour and style won first in both the next two classes. Good Pekins and Silver-laced divided the honours in the next classes, the third places going to fair Goldens, but not equal to the Silvers. 637 (Boissier), good White-booted; but surely this pen should have gone into

class 56, for that is termed for "Black or White" hens. This is a point which requires settling, whether "Black and White" means only for rose-combed birds of these colours. The schedules should always state this, for in this case especially ignorance on the subject kept back some entries which would otherwise have been made. The Sale classes were good, and many of the birds cheap at the catalogue prices.

In *Pigeons* the Pouters were judged by Mr. Gresham, and the remainder, we believe, by him and Mr. Tegetmeier. White Pouter cocks were very good, the first an extraordinarily nice bird; he was showy and good in limb. The first White hen was also a beautiful bird in every way. The winning Blue cock was, too, a wonderfully good bird for colour and limb. In Carrier hens the first Black was a good bird for head and wattle. The first Almond cock in Tumblers was a little beauty of exquisite markings and shape. In the other Tumbler class a pretty Black Baldhead was first, and only in at 21s., a bargain for some one. Turbitts were very good, the Silvers remarkably so; while in the next class a pretty Yellow was first. In *Dragoons* the judging was very good, and the work was by no means easy. In *Jacobins* a good Red was first, being fine in colour and beautiful in mane. In Nuns an honestly shown Black was first, second place going to a good Red. In the Variety class a nice Red Swallow in good condition was first, and a fair Russian Trumpeter was second. Fantails were particularly nice, and the three prizes went across the water to birds in charming feather. We hear of many of the birds having returned to their homes in beautiful condition, which would show that the accustomed Northampton care had been again bestowed. We furnish the awards below.

POULTRY.—*DORKINGS*.—Cock.—1, Miss M. E. Smith. 2, J. Stott. 3, W. Harvey. Hen.—1, T. C. Burnell. 2, W. Harvey. 3, T. Briden. *COCHINS*.—Cinnamon or Buff.—Cock.—1, H. Tomlinson. 2, Mrs. Allsopp. 3, W. A. Bindley. Hen.—1, A. Tindal. 2, H. Tomlinson. 3, Clarke & Pennock. *PARTRIDGES* or *BLACK*.—Cock.—1, Mrs. A. Tindal. 2, H. Tomlinson. 3, W. Mansfield. Hen.—1, Mrs. A. Tindal. 2, H. Tomlinson. 3, Rev. R. S. Woodgate. *WHITE*.—Cock.—1, Mrs. A. Tindal. 2, Rev. R. S. Woodgate. 3, W. A. Bindley. Hen.—1, Mrs. A. Tindal. 2, Rev. R. S. Woodgate. 3, W. A. Bindley. *BUFFS*.—Cock.—1, Mrs. A. Tindal. 2, Rev. R. S. Woodgate. 3, W. A. Bindley. Hen.—1, Mrs. A. Tindal. 2, Rev. R. S. Woodgate. 3, W. A. Bindley. *PARTRIDGES*.—Cock.—1, Mrs. A. Tindal. 2, Rev. R. S. Woodgate. 3, W. A. Bindley. Hen.—1, Mrs. A. Tindal. 2, Rev. R. S. Woodgate. 3, W. A. Bindley. *WHITE*.—Cock.—1, Mrs. A. Tindal. 2, Rev. R. S. Woodgate. 3, W. A. Bindley. Hen.—1, Mrs. A. Tindal. 2, Rev. R. S. Woodgate. 3, W. A. 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R. S. Woodgate. 3, W. A. Bindley. *PARTRIDGES*.—Cock.—1, Mrs. A. Tindal. 2, Rev

TAILS.—*Cock or Hen.*—1, 2, and 3, E. A. Seale. *who, A. A. Vander Meersech.* **ANTWERPS.**—*Short-faced.*—*Cock or Hen.*—1 and 2, H. Yardley. 3, C. Gamon. *who, T. Tweedale.* *Long-faced.*—*Cock or Hen.*—1, R. Scragg. 2, T. Mason. 3, H. W. Johnson. **NUNS.**—*Cock or Hen.*—1, W. Brown. 2, A. A. Vander Meersech. 3, E. A. Seale. **MAGPIES.**—*Cock or Hen.*—1, F. P. Bailey. 2, E. A. Seale. 3, H. Jacob. **ANY OTHER VARIETY.**—*Cock or Hen.*—1, T. Tweedale. 2, W. Harvey. 3, A. & W. H. Silber. *who, P. P. Baily.* **SPECIAL SELLING CLASS.**—*Cock or Hen.*—1 and 2, W. Nottage (Carrier, Porter). 3, T. Herrieff (Short-faced Antwerp). *who, W. G. Hancock, W. Draycott, Jun.* *Cock or Hen.*—1, H. Yardley. 2 and 3, W. Nottage (Carrier, Porter). *who, P. Hutchinon, H. Yardley, T. H. Stretch, J. Baker.* *Cock or Hen.*—1, T. F. Rockham (Dun Carriers). 2, C. E. Chavaase (Black Carriers). 3, G. C. Livett (Silver Runt). *who, P. Hutchinon, R. Woods, E. T. Dexter (Blue Dragons), J. J. Osbond.* **RABBITS.**—*Long Ear.*—*Buck or Doe.*—1, Mrs. W. S. Wade. 2, H. W. Simmons. 3, J. Bingham & Son. *Angora.*—*Buck or Doe.*—1, H. Swetnam. 2, E. A. Boisclair. 3, J. Martin (Doe). *who, H. E. Gilbert (Doe), R. H. Swain.* **HIMALAYAN.**—*Buck or Doe.*—1, S. Ball. 2, W. Hey (Doe). 3, H. E. Gilbert (Buck). *who, S. Ball, James & Hallam (Doe).* **DUTCH.**—*Buck or Doe.*—1, A. W. Whitehouse. 2, F. Sabbage. 3, Mrs. J. Foster. *who, Mrs. J. Foster, C. Lilley, G. Johnson.* **SILVER GREYS.**—*Buck or Doe.*—1, F. Purser. 2, J. Firth. 3, F. Purser. *who, E. Amos, Rev. T. Beasley (Buck), H. Woods, Mrs. J. N. Beasley (Buck).* **ANY OTHER VARIETY.**—*Buck or Doe.*—1, G. C. Livett (Belgian Hare). 2, E. Robinson (Belgian Hare). 3, Rev. T. Beasley (Silver Cream). *who, Rev. T. Beasley (Belgian Hare), J. E. Pilgrim (Belgian Hare), G. Johnson (Belgian Hare).* **SPECIAL SELLING CLASS.**—*Lops excepted.*—*Buck or Doe.*—1, Foster & Chambers (Dutch). 2, E. Robinson. 3, W. Nottage (Angora Doe). *who, W. Lamb (Belgian Hare), J. Martin (Angora Buck).* *Long Ear.*—*Buck or Doe.*—1, H. W. Simmons. 2, T. H. Jones (Black). 3, Bingham & Son (Doe). **CATS.**—*Long Hair.*—*Male.*—1, E. Campston. 2, R. H. Thompson. 3, Mrs. Sarjant. *who, Miss L. N. Beasley.* *Female.*—1, T. W. Faulkner. 2, A. Bedford. 3, J. W. Howard. **TARRIES.**—*Male or Female.*—1, T. N. Gilbert. 2, E. Baxter. 3, J. Woods. *who, S. Deane, Miss L. Parker, B. Hughes.* **ANY OTHER VARIETY.**—*Male or Female.*—1, Mrs. Staler. 2, S. Hickman. 3, R. Love. **SPECIAL SELLING CLASS.**—*Male or Female.*—1, W. Nottage. 2, Miss C. Bonser. 3, T. J. Fallick. *who, Mrs. M. A. Munday.*

LONGEVITY OF BIRDS.

A VALUED friend, the Rev. Father Noethen, has in his possession a Ring-neck Dove which he has owned for nineteen years, and which up to the time of writing is wonderfully prolific and as sprightly as when young. He also states that he has known one specimen to live to the age of thirty years.

The domestic Goose sometimes attains very great age. Some time ago a statement was made in a paper that Geese frequently live to be very old, and at the same time a record was given of one which had attained the age of 128 years.

Mrs. Colrose now owns a Canary which she has had in her possession thirteen years. It was an old bird when it flew from some cage in the vicinity in her window. She has another which she reared which has passed its twenty-first year, and from appearances may live much longer.—(*American Fanciers' Journal.*)

MR. G. SHRIMPTON.—We hear the painful news that another of our poultry fanciers has passed away.—Mr. George Shrimpton of Leighton Buzzard. He was well known as a true fancier. He made Coochins his speciality, and was a good and careful breeder. All who had business with him found him fair and honourable in his dealings. We can speak with confidence ourselves, for perhaps no other fanciers have had more dealings with him.

REFORMATION IN BEE-KEEPING IN THE NORTH OF SCOTLAND.

"THE bee-keepers of Aberdeenshire and Banffshire are in the van of progress and success," or words to the same effect were made by Mr. Pettigrew in his article "Retrospect," in the *Journal of Horticulture* of October 14th last. I was much struck with the remark, and coming as it did from such a high authority on bees, I have often since thought of giving you my account of how we have arrived at our present position.

The parties named in the "Retrospect" in these counties were George Campbell, Henry Pittaligo; Robert Gordon, Garly; Alexander Cockburn, Cairnie, and myself also, of the latter parish. Mr. Campbell will not be referred to in my remarks. He is a bee-keeper, I understand, of over thirty years standing and of great experience, although owing to his distance from us we had not heard of him until two or three years ago. On the other hand, what standing we have attained has been reached in less than six years. I began bee-keeping in 1870, A. Cockburn a year or so after, and R. Gordon about 1872. We have been earnest enough apirians since, but before that we knew comparatively little if not absolutely nothing about bees. We and many others around us who have made rapid improvements in bee-farming live in the Huntly or Strathgogie district of the above-named counties, and some miles distant from the Great North of Scotland Railway.

About the month of April, 1870, the *Banffshire Journal* contained a review of Mr. Pettigrew's "Handy-Book of Bees," the first edition of which was just then published. This review was so favourable and represented the book in such approving terms that I resolved to have a copy for myself. On ordering the book from a bookseller in Huntly, who had it not in stock, I was cautioned that often the best of a book was contained in a review, and as it cost then 4s. 6d. I should better consider ere I invested. Well, I had considered and resolved to have it. When I perused it I became immensely captivated with the

writer, his writings, and particularly with bees: he appeared so thoroughly acquainted with the subject, the style was clear and comprehensible, his aim appeared so disinterested—namely, to learn beginners, the most timid or ignorant; then the little trouble or expense that seemed necessary in following out the instructions that pervaded every page of the book. For these reasons I resolved, believing every word, to act up to every injunction, and also to have bees in my possession as soon as possible. I accordingly obtained a swarm in the July following.

About the end of the year 1870 the *Banffshire Journal* contained the annual report of Mr. Pettigrew on "Bee-farming;" at the close of this the editor intimated that he would report any course of management, experiments, or results that might be sent him on bees. Some weeks passed, and as no one wrote I ventured to break the silence about the second week of January, 1871, after having been an apirian for about six months. In this communication four things were stated that I had accomplished, which were believed to be impracticable by every bee-keeper that I had happened to come in contact with—viz., 1, Had driven out bees from among combs and honey without smoking; 2, had united several of these swarms without their fighting; 3, had fed them so that, though at the end of the honey season, they had nearly filled a skep with combs and honey out of sugar and water; and 4th, the said skep was one 16 inches wide and 12 inches deep, inside measure. No other party gave any account through the *Journal*. In course of time some bee-keepers asked through the same *Journal* how my bees were getting on. I replied, and in numerous articles afterwards through the same channel were the new ideas of drumming, uniting, feeding, and big skeps kept before the public. In these communications I invariably gave out that it was by acting up to Mr. Pettigrew's directions that these revolutions in bee-management were accomplished.

The size of the skeps in general use here at that time would average 12 inches wide and 11 inches deep, some bigger and some less, and being bell-shaped, not flat-crowned, they would be just about half as big as a 16-inch skep now so frequently used hereabouts. When I received my first skep of the latter size, the merchant in Keith who had it made to order said, "Well, you may succeed, I hope you will, but I some doubt you." On my leaving and passing along the street I was met by an auctioneer, one whose calling made him acquainted with most of the things in use in the country around. He accosted me thus, "What in the world are you going to do with such a skep?" Its size, so immensely larger than the common kinds, made every beholder predict that a failure would be the result of my efforts to fill it. But my success, although only a beginner, was so that others began to increase the size, and 18 inches by 12 inches, and 20 inches and even 24 inches wide by 12 inches deep, and these requiring ekes at times, are now in use in innumerable places. It may be said, in these northern counties of course the small hives were also asked when required; but what we say is, that the big skep or hive now in use is a chief or the chief cause of the position we now appear to hold among apiculturists. An author says in effect, "Although not disbelieving about these large hives, suffice it to say I have never seen one." Well, I can assure him such are to be seen. I assisted to weigh one last year over 140 lbs. gross weight, and over three guineas was received from a merchant for its honey and comb. Another party has said, "Such should appear at some of the great honey shows." A reasonable enough expectation, but for those who keep bees for profit such an undertaking would be no light matter to have it conveyed some six hundred miles to London.

I cannot refrain from saying, ere I close, that the very egotistical-like manner in which I have had to write this is against my wish, but I could not otherwise, to the best of my knowledge, avoid it and give at the same time an account in connection with the "Handy-Book of Bees," of the great improvement in bee-keeping in the north of Scotland.—JAMES SHEARER, Cairnie, Aberdeenshire.

THE CAPACITY OF BAR-FRAME HIVES.

A CORRESPONDENT (Mr. Eldridge) puts the following question:—"Will Mr. Pettigrew be good enough to say if a frame hive having a capacity of 8000 cubic inches is, in his opinion, that best adapted for the production of super honey? If not, what are his views of the right capacity when super honey is the object in view, and where run honey only is desired?" This is a very important and comprehensive question, and as it is fairly and intelligently placed before us we think it deserves a special answer.

For the production of super honey in large quantity large hives are necessary, but there is great difficulty in finding the size best adapted for this end. I am of opinion that 3500 cubic inches of space in a hive will be very near the point of excellence. Were I going to keep bar-frame hives I would have them made as near as possible to this size, and in shape considerably longer than broad, but the longer shape would not help the bees to store up super honey. The longer shape would secure a larger

supply of pure virgin honeycomb from the hives themselves, for in hives of fourteen and sixteen bars the outside bars would be often filled with pure honeycomb equal to super honey.

It should be borne in mind that hives of any size are generally in good seasons about one-third or one-fourth filled with honey before the bees enter the supers placed on them. Under the best management the combs of hives cannot be wholly preserved for breeding purposes. The outside combs, and indeed parts of all the combs, become loaded with honey frequently before supers are required. Honey stored in combs of course contracts the breeding spaces in the combs. Sufficient breeding space should be afforded to the bees as well as store room, for if breeding space be not given to the bees they have to destroy many eggs, to their own and master's loss, and it may be they are compelled to entertain the question of swarming. While bees have room for both brood and honey, and are not overcrowded in their hives, the question of swarming is not urgently pressed on their attention, neither are they hindered in their work of multiplying numbers and accumulating stores. In hives of less capacity than 8000 cubic inches bees have not room enough for full action. By using ekes we can enlarge our straw hives one-third when necessary, but with bar-framers enlargements cannot be made, except of course by supering, and this is one of the greatest difficulties in properly and successfully managing bees in bar-framers, but the larger they are the less the difficulty will be felt.

Nutt's collateral hives were a failure in every sense, because they were complicated, or in other words had too many partitions in them. A Nutt hive consisted of a central and two side boxes. The bees in the central boxes often swarmed before an ounce of honey was stored in the side or collateral boxes; but suppose the partitions had been removed, making the three boxes into one, how much more roomy, convenient, and natural it would have been for the bees! How few swarms would have been lost! Nutt's hive is brought into view here with the hope that those who use bar-frame hives for the production of honeycomb will see that pure honeycomb may be more abundantly obtained from elongated hives than from square hives, though shape is of less importance than size.

For the production of both super and run honey I would have frame hives with a capacity of 8500 cubic inches. Every year's experience strengthens my faith in the advantages of large hives, both as swarmers and non-swarmers, both for super and run honey. The sooner bee-farmers begin to pull down their barns and build greater the better, for with large storehouses and plenty of harvesters every farmer will be both gratified and satisfied with the produce of his apiary on the return of every season favourable for honey-gathering.—A. PATTERSON.

OUR LETTER BOX.

LICE ON FOWLS (L. R. L. J.).—Parasites in fowls are always the result of low condition, consequent on improper food or management. To keep the number of fowls you do in the space you name would require constant attention if they are to be kept in health. It is impossible to do so on a brick floor, assuming that no other will answer your purpose. We should stipulate that it should be covered with at least 8 inches of dry gravel or road grit. The fowls must also have their dust bath under cover. The addition of sulphur is a good one. You must treat your chickens by putting some ointment on all the bare spots, and rubbing some into the roots of the feathers, or you may use oil in the same manner. Kill-off the birds that are most afflicted. No style of feeding is so bad or so unprofitable as that which consists in giving the same amount of food at all times and under all circumstances. Having fixed on the food that seems best fitted, feed with it at stated times so long as the birds will eat. Leave none by them. We advise ground oats or barley meal slaked with water in the morning; the same in the evening or afternoon; some whole corn or house scraps at midday. They must be daily supplied with some growing grass or cleanings or sweepings of the garden. Some lime, chalk, or bricklayer's rubbish should be mixed with it. Any rubbish containing animal or vegetable life may be thrown in at any time, and as the flooring is brick it can be removed and the place swept clean every day. The history of keeping large numbers in small spaces is by painstaking to supply them artificially with that they would get if at liberty in almost unlimited space.

FOWLS FOR EXHIBITION (Notice).—It seems to us that you are trying to do too much for your space. It is better to keep two breeds well than four badly. To breed prize birds the whole space should be given to one breed. You might keep Cocksins and either of the others except Dorkings with hope of success. Let one of the two breeds be out in the morning, the other in the afternoon. You would then have barely room for rearing a few chickens. The case would be altered if the wire fence could be raised at intervals, and the fowls have access to the grass fields. For chickens to do well they should be away from the walks of the adults. When all are in the same place the adults steal all the food, and either half starve the chickens or cause unnecessary expense.

DORKING HENS (Old Subscriber).—There is nothing in your description of your birds that a little patience will not remedy. Curious things often occur to a pullet while laying her first eggs. The small eggs you mention are common. The desire to lay and even the getting into the nest are not unusual. Both are unfailing symptoms of coming eggs. Your feeding is as good as need be. The flagged yard would be bad if there were no other outlet, but as the fowls can choose between that and an acre and a half of grass no alteration is necessary.

FALCONS' EGGS UNPRODUCTIVE (E. B. T.).—We have no doubt your failure may be attributed to a dry heated atmosphere. The same causes produce the same result in all hatching. Eggs want moisture to facilitate the exit of the

bird through their shells. Failing if you might as well expect the bird to force its way through an indian rubber bag as through the inner membrane when hardened by heat and drought.

RABBITS FOR PROFIT (O. H.).—We know no Rabbit that will answer your purpose so well as the Hare Rabbit. It is very hardy, breeds freely, and attains a good size while yet very young. Rabbits have never sold so well as during the last twelve months.

COLLATERAL HIVES (Inquirer).—There are various objections to collateral hives which have prevailed to discard their use almost entirely. We had large experience of them in our days of novitiate as bee-keepers, and although the bees worked in the collateral boxes on Nutt's and White's principle (two or three boxes side by side), we found by experience that there was no single advantage alleged in favour of the collateral box which was not more than matched or compensated for in the use of the storifying principle. A great objection to them is the increased room required on stands or in bee houses.

WAX GUIDES FOR COMBS (F. J.).—As it appears that you have no bars to your hives, it will be sufficient for you to form a single ridge of wax foundation. If, as we take it, your object be to oblige your bees to work in a particular direction, for this purpose one guide comb will be found sufficient. Mr. Cheshire's invention appears to be an excellent one, though we have no experience of it. As Mr. Lee of Bagshot manufactures and sells Mr. Cheshire's hives and other bee apparatus, we advise you to apply to him for the information you require.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.
Lat. 51° 33' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain.
1876.	Barom. at 10 and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot	Shade Tem- perature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
March.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	
We. 1	29.551	53.0	50.1	W.	44.0	50.1	39.0	55.5	36.0	0.548
Th. 2	29.648	48.6	41.0	S.W.	44.0	51.0	39.0	54.5	34.1	0.196
Fri. 3	29.734	53.1	50.3	S.W.	44.0	51.1	43.9	75.3	42.3	—
Sat. 4	29.699	45.6	43.8	W.	44.5	51.3	42.1	97.8	36.6	0.097
Sun. 5	29.717	44.3	43.3	S.W.	44.5	50.4	36.8	67.3	30.3	0.068
Mo. 6	29.577	51.9	48.3	W.	44.3	55.3	43.5	100.1	44.6	0.087
Tu. 7	29.710	43.3	38.6	W.	43.0	49.4	36.8	87.3	33.6	0.020
Means	29.689	47.3	44.8		43.9	51.0	40.9	81.4	37.0	0.797

REMARKS.

- 1st.—Very rainy all day, except for short intervals; at times the rain was rather heavy.
 - 2nd.—Fine early, but rain before 10 A.M., and fine again before noon; fine in the afternoon, but slight rain in the evening.
 - 3rd.—Damp and dull at 9 A.M.; fine in the middle of the day, showery between 5 and 6 P.M., but very bright evening and night.
 - 4th.—Very fine morning, but rain and hail just after mid-day; fine afternoon (day and evening).
 - 5th.—Rain early; fine from 9 to 11 A.M., though showery all the rest of the day.
 - 6th.—Stormy early; very fine and bright by 9 A.M., though the wind continued, and it was showery all day, but fine though still windy at night. Lunar halo 10.30 P.M.
 - 7th.—Fine (except slight showers) all day; the wind high, and the sun bright. Lunar halo 10 to 11 P.M.
- Temperature very similar to the previous week, vegetation advancing rapidly, strong westerly winds.—G. J. SYMONS.

COVENT GARDEN MARKET.—MARCH 8.

A SUPERABUNDANCE of Broccoli from the west and Channel Islands has caused prices of vegetables to have a downward tendency. Quotations for best sorts of Apples are higher. Cobs are in fair demand. Business quiet.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	4	0	8	0	Mulberries.....	lb.	0	0	0
Apricots.....	dozen	0	0	0	Nectarines.....	dozen	0	0	0
Cherries.....	lb.	0	0	0	Oranges.....	£100	6	0	12
Chestnuts.....	bushel	10	0	0	Peaches.....	dozen	0	0	0
Currants.....	4 sieve	0	0	0	Pears, kitchen.....	dozen	0	0	0
Black.....	do.	0	0	0	dessert.....	dozen	8	0	12
Figs.....	dozen	0	0	0	Pine Apples.....	lb.	1	0	4
Filberts.....	lb.	0	6	0	Plums.....	dozen	0	0	0
Gooseberries.....	lb.	0	6	0	Quinces.....	4 sieve	1	0	0
Cobs.....	lb.	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	5	0	17	Strawberries.....	lb.	0	0	0
Lemons.....	£100	6	0	13	Walnuts.....	bushel	4	0	10
Melons.....	each	0	0	0	ditto.....	£100	1	6	2

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	4	0	6	Leeks.....	bunch	0	4	0
Asparagus.....	£100	6	0	10	Mushrooms.....	pottle	1	0	2
French.....	bundle	18	0	0	Mustard & Cress.....	punnet	0	2	0
Beans, Kidney.....	£100	1	6	2	Onions.....	bushel	2	0	0
Beet, Red.....	dozen	1	6	8	pickling.....	quart	0	0	0
Broccoli.....	dozen	0	9	1	Parley.....	doz. bunches	2	0	0
Brussels Sprouts.....	4 sieve	1	0	0	Parsnips.....	dozen	0	0	0
Cabbage.....	dozen	1	0	2	Peas.....	quart	0	0	0
Carrots.....	bunch	4	0	8	Potatoes.....	bushel	2	6	0
Capicums.....	£100	1	6	2	Kidney.....	do.	8	0	0
Cauliflower.....	dozen	1	0	4	New.....	lb.	1	6	2
Celery.....	dozen	1	6	2	Radishes.....	doz. bunches	1	0	0
Coleworts.....	doz. bunches	2	0	4	Rhubarb.....	bundle	0	0	0
Cucumbers.....	each	1	0	0	Salsify.....	bundle	0	9	1
Endive.....	dozen	1	0	2	Scorzonera.....	bundle	1	0	0
Fennel.....	bunch	0	8	0	Seakale.....	basket	1	6	2
Garlic.....	lb.	0	6	0	Shallots.....	lb.	0	2	0
Herbs.....	bunch	0	8	0	Spinach.....	bushel	4	6	0
Horseradish.....	bundle	4	0	0	Tomatoes.....	dozen	0	0	0
Lettuce.....	dozen	6	0	1	Turnips.....	bunch	0	4	0
French Cabbage.....	1	6	2	6	Vegetable Marrows.....	0	6	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MARCH 16—22, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.		Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.		m.	s.	
16	Th	Royal Society at 8.30 P.M. Leeds Spring Show closes.	51.0	34.0	42.5	6	18	6	5	0	59	8	8	20	8	58	76
17	F	Royal Institution at 8 P.M.	52.0	35.5	43.8	6	10	6	6	2	9	8	38	21	8	21	77
18	S		49.9	38.0	41.5	6	8	6	8	8	8	9	26	1	8	8	78
19	SUN	8 SUNDAY IN LEWT. [Surgical Society at 8.30 P.M.	50.9	38.0	41.9	6	6	6	10	8	54	10	26	22	7	45	79
20	M	London Institution at 6 P.M. Royal Medical and Chi-	51.1	38.8	42.5	6	4	6	11	4	28	11	57	24	7	27	80
21	Tu	Zoological Society at 8.30 P.M.	50.7	38.5	41.6	6	1	6	13	4	59	0	58	25	7	9	81
22	W	Meteorological Society at 7 P.M. Bristol Spring Show opens.	50.4	34.5	42.5	5	59	6	15	5	10	2	11	26	6	51	82

From observations taken near London during forty-three years, the average day temperature of the week is 50.7°; and its night temperature 38.5°.

SYRINGING VINES—FORCED STRAWBERRIES.

TO an old amateur like myself the differences of opinion about the treatment of Vines by the doctors is very remarkable. On page 178, No. 779, in the article of "Doings of the Last and Work for the Present Week," Mr. Douglas says that to syringe the Vines would sadly mar the appearance of the fruit; while Mr. Pearson, no mean authority, in his "Vine Culture" says, "Except when in flower we use the syringe every afternoon, unless the weather be cold and damp, till the Grapes show colour, and I know 'no other way' in which they can be kept free from red spider." Thus we poor amateurs are in a fix, for if we syringe we spoil the bloom of our Grapes, and if we do not syringe we are eaten up with red spider. When first I grew Grapes I had, or rather my Vines had, red spider; then I, under advice, bought a syringe and spoiled my Grapes, each of which had a ring of white round it. Now I neither have red spider nor white rings.

Noticing that Plums and other fruits do not have their bloom destroyed by the pure rain-drops, I came to the conclusion that it was not the water, but something deposited from it that did the injury, and I bought a charcoal filter; this, as soon as the berries are set, is placed on a shelf with a four-gallon can underneath and the tap left open, and I fill it from time to time as I find it empty, cleaning it well out every week. I obtain daily three or four gallons of water quite pure and of the same temperature as the house, and with this my Vines are syringed once or twice a-day according to the warmth and brightness of the day. Since then I have had no red spider, and I find the bloom on the Grapes uninjured.

What I find most troublesome are the blue-bottle flies, which certainly injure the bloom by flying against the bunches, and eat the Grapes as well. My houses are lofty, with circular roofs (Cranston's), and it is no joke climbing up to tack hexagon netting over the ventilators, besides which the flies come in at the doors, and some are perhaps even bred in the house.

I find some Grapes, such as Trentham Black and Royal Muscadine, are very liable to crack, although under the same treatment; others, as Black Hamburgh and Sweetwater, never crack with me. I am unwilling to discard my Trentham Black, as all my friends and myself think it a much better-flavoured Grape than the Black Hamburgh; it is also earlier, and gives me larger and heavier bunches. I find that cutting the laterals below the bunch halfway through with a very fine saw checks the cracking at once, but I think slightly injures the growth of the Grapes, making the berries somewhat smaller than they might otherwise have been.

Here again the doctors differ. One gardener says the border must have been too dry; another, they must be wet; but I found that one Vine planted in an outside border, which was certainly wet enough last year, did not crack at all like the other planted inside, and I cannot

help thinking that both are right, and that possibly at some time or other the inside border might have been a little too dry for a few days, causing the skin of the Grape to become somewhat inelastic; when the border was watered it could not expand with sufficient readiness to take up all the sap, and so the fruit cracked.

These Vines grew last season with great vigour, and even when the fruit was colouring were making fresh growth, so that almost daily I had to stop some growing points, and they were still covered with those spangles of extravasated sap which are always so satisfactory to the eyes of their cultivator.

Most amateurs who grow Vines grow a few Strawberries in pots. I generally grow two or three hundred pots on shelves level with the ventilators, of which there are three at each side of the houses, the entire length of the range. With Black Prince, the earliest and most prolific of our Strawberries, I always produce a good crop; their only fault is they are small—in these days "there are giants"—and I fail to get more than three or four good fruit on Keens' Seedling or British Queen. I am trying this year four different varieties—President, Dr. Hogg, Vicomtesse Héricart de Thury, and Rivers' Eliza, but I see several of these but not one of the Black Prince are blind, and some of them went off when in their blooming pots out of doors with a disease I have not seen before—the leaves and stems turned black, though the roots seemed sound. Cannot some one raise a Strawberry as early and prolific as Black Prince, but a size larger?

I find by thinning the bloom buds to two or three in a truss that the berries are much improved in size. I have generally four or five trusses of fruit on each plant. I consider that the syringe plays a very important part in keeping down red spider and green fly. I stick to Mr. Rivers' prescription of malt dust and horse droppings, which should be rubbed through a fine sieve and mixed in equal proportions. This is placed on the pots as soon as the Strawberries are swelling their first fruit, and the effect is highly satisfactory.—J. R. B.

A RHODODENDRON NURSERY.

HAVING been growers of Rhododendrons for more than thirty years, a few observations from us may be useful. Our nursery is on the edge of Thorne Moor, a peat bog comprising several thousand acres, situated in a low flat district at one time liable to be overflowed by the rivers Trent, Ouse, and Don. The peat is an accumulation of vegetable matter on a submerged forest, varying in depth from 10 to 20 feet. The surface is flat, and is above the level of the adjoining cultivated land, but being very much composed of sphagnum and other mosses, and the surface covered with Heath (*Erica tetralix* and *E. vulgaris*), the water is retained as by a sponge, and until within a few years it was too soft to bear any kind of cattle upon it.

Our first essay at Rhododendron-growing was by the purchase of a single little plant of *R. ponticum* for 5s., which was planted in a small plot cultivated as a garden

by the edge of the waste. Very soon after it was found to have been wilfully stamped upon by some mischievous trespassers. The split branches were collected and stuck into the perpendicular wall of peat that bounded the garden on the north side. Some of them rooted, and three more plants was the result. As years passed on seedlings were found springing up in great numbers; and on a visit from the late Mr. James Backhouse of York, who was much interested in the district, we offered to give him a lot of seedlings, and in return he sent us half a score new plants with splendid foliage, and which grew vigorously, but never flowered, as every severe winter they were cut down to the ground. However, after having them ten or fifteen years they did produce some imperfect scarlet flowers. In the meantime we had purchased some of the best sorts we could procure, and we have raised thousands from seed. We have a trench cut in the solid peat 40 yards long, with three shelves on each side, and on these shelves the seed was sown, and when the whole was covered by a double herring net supported on spars sufficient protection was afforded to produce plants in any quantity, stout, vigorous, and healthy, with no trouble except the labour of transplanting.

Our nursery being low we suffer at times from frost, especially midsummer frosts, when the young shoots are pushing, and also at times injury is done in the autumn from the wood not being fully ripened, otherwise our plants are splendid, the foliage being unusually bold and vigorous. We find seedlings come in very tardily until they are well rooted, then they grow quite fast enough. About four years ago all our plants were kept on ground from which the peat had been mostly cleared off for fuel, the soil of which in some places is hungry white clay, in other parts sand, but all of a very poor quality, and as we use very little tillage of any kind the plants are not forced. Before we had learned by experience, we bought thousands of small seedlings at a low price; these being plucked-up like Cabbage plants had all the fine fibrous roots torn off, and therefore a large per-centage failed or made very slow progress for some years. We have sold plants with a good ball of root in May which have been replanted and flowered well in June.

As to the soil, where grassy sods and open porous soil, not too dry, can be had without chalk or lime the plants will do very well. We have seen good beds on a high chalk cliff where plenty of peat, leaf mould, and sand has been used, and the plants are very flourishing. In clay, sods, leaf mould, sand, or washed gravel should be used, or the plants will not grow bushy, but lose their leaves and show bare stems.

As to the time of flowering it is rare when we cannot find some in flower, seedlings or others. *R. dauricum* was in flower in January, and some branches sent in a box to Scotland opened-out and looked beautiful there for three weeks. This species is now in full flower and unprotected, February 26th. *R. varium* will flower next month; *R. Cunninghami* and others will follow unless the weather—say with frost and afterwards bright sunshine, which has much more effect than dry cold weather—should spoil them.

As *Rhododendrons* are so hardy, so effective, and cheap, it is surprising that they are not more generally planted, as they will succeed where the common Laurel fails. They are capital for game covers, very few of them being eaten by rabbits, and when in flower they are a great ornament to the woods.—W. & J. C. O.

ROSES FROM CUTTINGS.

MR. CAMM is an enthusiastic Rose-grower and exhibitor; his effusions on the subject are always pleasant and generally practical, and probably many an ardent young amateur learns by heart all he has to say. If it were an unknown man who had penned the lines at page 181 I should not have troubled you with these remarks; but when Mr. Camm says "it takes years to form a good Rose tree from a cutting," and thereby leaves the reader to think that it takes many years, I must beg leave to say that it depends on the way in which the work is accomplished. In your number for April 22nd of last year I described my mode of growing Roses from cuttings, or rather not mine, for the hint, as well as many other valuable hints on which my practice is based, was taken from this Journal some eighteen or twenty years ago.

I cannot pretend to lay claim to such a knowledge of the art of exhibiting as Mr. Camm possesses, and I admire his manly way of teaching all he does know instead of keeping it to himself; but Roses are grown for other purposes besides ex-

hibiting, and for all such other purposes I have no hesitation in saying that where there is a good natural Rose soil—i.e., a clayey loam, such as the hedgerow Briar delights in, that Roses on their own roots are decidedly the best. They do not produce a large flower or two and then bid us goodbye, but go on increasing in size and beauty year after year, and produce blooms by the hundred, filling the air with their fragrances.

Last November I planted 250 plants which had been put in as cuttings exactly two years before. They are planted 8 feet apart every way on a border of very stiff soil, and I expect them to nearly cover the ground this coming summer, and that without any tying or pegging. These were selected from some four hundred or more struck at the same time. I have older plants in great numbers which made growths last summer from 6 to 8 feet in length, and although the season was a cold one the wood is tolerably ripe; and what is a special advantage this year, there are dormant buds to prune to, which on standards are rather too scarce.

My pot Roses for forcing are mostly on their own roots, and those which are not so are decidedly inferior to the others. I cannot have the newer kinds this way, but for my purpose old varieties, if they are good, will do just as well.

During the London season I have to supply abundance of flowers for the dinner-table. A table for twenty or more people twice a-week has to be covered, excepting a few inches at the edge, with flowers of one, or at most of two colours, and Roses, of course, are preferable to anything else. On one occasion last year I sent nine hundred blooms of *Gloire de Dijon*; on another as much *Stephanotis* as would fill two bushel baskets, and sufficient pink Roses to make an outside line; at another time it would be crimson Roses, and so on. I say nothing about the taste of such arrangements, I have simply to obey orders.

Now it is plain that such a demand could not be met with a few hundred standards. No; the point to aim at is to have Rose bushes as big as our *Rhododendrons*, which, I am happy to say, I am in a fair way of doing. The flowers may not be up to Mr. Camm's idea of exhibition Roses—we have no time to attend to them sufficiently for that—but still they are very beautiful, and you can cut and come again.

Why not use more Roses in shrubberies and by woodland walks? Have them on their own roots, and do not prune too much. Nearly all the *Perpetuals* are as hardy as the common Briar if they are not coddled-up. They would not, perhaps, be prettier than the single Briar in like positions, but their flowering season is longer, and they are mostly sweeter.

Rose cuttings of the *Perpetual* class should not be put in under glass, but more in the way of Gooseberry and Currant cuttings in November, and the wood must be ripe. Teas strike best from half-ripe wood in July and August under hand-lights against a north wall.—WM. TAYLOR.

CULTURE OF HIPPEASTRUM PARDINUM.

THIS fine Amaryllid is now (middle of February) in our stove very beautiful. It is one of the finest introductions made by the Messrs. Veitch from foreign countries, this one being from Peru. The flowers are very large, opening out flat without any, or scarcely any, tube, the whole of the interior being exposed to view, displaying a creamy ground dotted or spotted as finely as the best herbaceous *Oleocaria*. Too much cannot be said in praise of this *Hippeastrum*, and no stove should be without it.

Its easy culture also is a great recommendation, and still further commendatory is its ready propagation by offsets which rise freely from the base of the bulbs; plants in 5-inch pots having four offsets now of a size large enough for potting, which in two years will make flowering bulbs. The plant is strictly evergreen, retaining the old leaves and putting forth new with the rising of the scape, in pleasing contrast to some other *Hippeastrums* which flower on the top of a footstalk with a few leaves rising from the centre, and destitute of that full garniture of foliage which contributes so much to the beauty of the flowers. Small bulbs of 2 inches in diameter flower freely.

I grow the plants in a stove and keep them always moist at the roots, and pot when the maximum of young growth is attained, using a compost of turfy loam with a fourth of old cow dung, and drain efficiently. During growth the watering is of course much more free than when the plants are at rest, but they are never kept dry. A light position is afforded them, and as to air it is regulated by the other occupants of the stove. The flowers are produced in pairs on a rather tall

scape, and are disposed back to back, so that the internal surface of one flower hides as it were the back of the other, presenting so much beauty as to be admirably suited for a small vase in a boudoir and for many other decorative purposes.

I have been keeping *Amarylises* moist at the roots during the resting season, and now they are starting strongly, having foliage several inches high, which will arch freely by the time the flowers are expanded, two scapes just showing from the neck of each bulb; and on turning them out of the pots the ball is a mass of white healthy roots, and altogether superior to the state of plants dried into brownness or almost out of existence, and which have to be restored by bottom heat to enable the scapes to develope with only a modicum of foliage. In their native habitat the plants are evergreen, which can only be a result of the bulbs being in soil with sufficient moisture to maintain the foliage and roots in a fresh state, and prepared, upon the return of moisture to the atmosphere and soil, for a vigorous growth of bloom and foliage.—G. A.

MUSHROOMS.

HACKNEYED, worn-out is writing on the subject of these desirable edibles. Nevertheless, I should like to note a few things respecting them, which may be useful. To be understood I think I ought to submit a section and ground plan. It may be useful to those having a shed and desirous of growing Mushrooms, and enable our *Agaric* savants to follow the Mushroom mycelium so as to account for its vagaries.

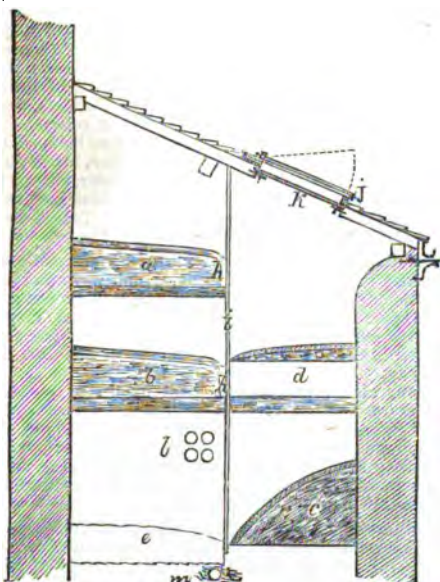


Fig. 64.—Section of Mushroom House.

Fig. 64 is a section. *a* is a side bed, the uppermost; *b*, lower bed; *c*, corner bed on the floor; and *d*, corner bed on a level with *b*. The corner beds are shown on the ground plan, fig. 65, at *c* and *d*. The floor bed *e* is used for forcing Seakale, Rhubarb, Chiosy, and, if need be, growing Mushrooms, but so as to be in before (and off) the beds *f* in the ground plan are required for the purposes named; and after they are not needed for Seakale, &c., forcing, are again available for Mushrooms. We usually fill one of these beds with Seakale every fortnight from early November up to the middle of March, so as to meet that coming-in in the open ground; and Rhubarb every three weeks from November up to the beginning of March.

The shelves for the Mushroom beds are of flags about 4 inches thick, and supported by 9-inch brick walls, *g*; and the sides, *h*, of 1½-inch deal, and maintained in position by 2-inch uprights, and 6-inch broad, *i*. Light and ventilation is admitted by the skylight *j*; and a wooden shutter is provided to exclude light at *k*. Heat is afforded by 4-inch hot-water pipes. Scale, ½ inch to 1 foot.

Now, the upper bed *a* is usually made up during the early part of September, and is spawned about the middle of the month. It is earthed a week after spawning, and commences

bearing usually in six weeks after earthing; but occasionally it is not in bearing until early December.

The bed *b* is made up in October or early in November, so as to be spawned by the middle of the latter month. The beds *c* and *d* are made up at the same time as *b*, and they come into bearing by the middle of January, *b* being in fully a fortnight before *c* and *d*. These, with *a*, give Mushrooms in six months of the year without renewal, the first dish being had on November 14th, 1874, and last May 26th, 1875; the first dish gathered in 1873, November 1st, and last April 21st, 1874, which is the only time the bearing was not continued into May. In 1873 the bearing was continued to June 12th, the longest time, the bed *a* having commenced bearing in the October preceding.

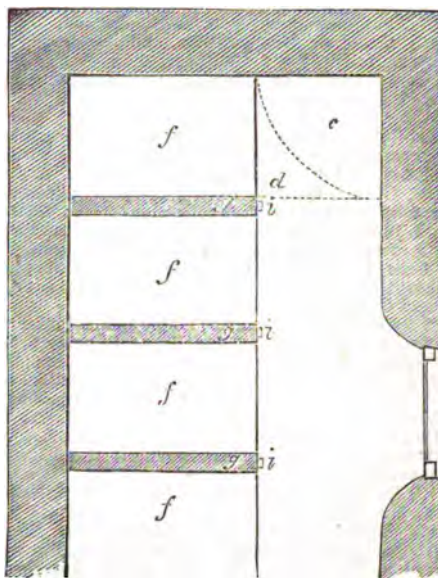


Fig. 65.—Ground Plan of Mushroom House.

All the beds were made in the same way with a similarity of materials, and the result has been the same in all instances, repeating themselves year after year; but though all the beds are made alike, similar materials employed, and spawn had from one place and used for all the beds alike, there is a vast difference in the produce of the beds, and in the mode of production as well as quality of the Mushrooms. This difference is what I wish to note.

The Mushrooms produced by the bed *a* come up very evenly over the surface, are not disposed in clusters, or rarely, and always so as to admit of their full development without pushing up or aside others to the former's benefit and latter's disaster. They, as a rule, are about half as thick in flesh and half the size of those borne by the other beds, and have rather thin long shanks, the head of the Mushroom inclining to the back wall or southwards, the gills seeking to be exposed to the light, hence the table inclines away from it.

Those produced by *b* rise in a measure in clusters, by which many in the button state are upheaved—lifted, as it were, on the heads or backs of the powerful risers. A majority, however, rise singly, or with room for development. The Mushrooms are double in thickness, and of course weight, size for size, of those produced by the bed *a*.

On both the corner beds, *c* and *d*, the Mushrooms appear and grow in clusters—lumps of buttons—developing in tier-like form one upon another, the upper ones retaining their hold of the soil by the mycelial filaments, and deriving such support as to preserve them, though small, in perceptible growth. The whole have a powerful hold of the soil, requiring considerable force to remove the "heaps." Some of the Mushrooms obtain full development, but many are buttons. One of these "heaps" drew the weigh-beam in their favour at 2½ lbs.

What I wish to have explained is, Why the Mushrooms rise singly are thin and small, though of excellent quality on the upper bed *a*; very thick, fleshy, and twice the size on the bed *b*, with a tendency to cluster; and why they should invariably come in clusters on *c* and *d*, they attaining a full degree of perfection in the cluster state not exhibited by the other beds when clusters appear. I should also like to know

what objection is to be taken to cluster Mushrooms, when "buttons" are held in even higher estimation than the full-developed edible.—G. ARNBY.

ROYAL HORTICULTURAL SOCIETY.

MARCH 15TH.

For several days previous to this, the first Exhibition of the season, the weather had been of the most inclement character—cold winds, rain, hail, and snow alternating, or not uncommonly uniting, creating discomfort and marrying enjoyment. Such was the case yesterday morning, and the exhibitors who faced the storm deserved their honours. As the day advanced the clouds dispersed, affording visitors an opportunity of enjoying the Exhibition. The Show was an excellent one, occupying the entire length of the western corridor, and the quality of the plants was generally of a high order. About five hundred Hyacinths were staged of full average merit, imposing by their stateliness and bright and varied colours.

In Class 1, for fifty Hyacinths, single spikes (open), there were only two exhibitors, Messrs. Veitch not competing this year. First honours were won by Messrs. Outbush & Son with dwarf vigorous plants and fine spikes; Messrs. Barr & Sugden, 12, King St., Covent Garden, having the second place. The most noteworthy varieties in these collections were: Whites—La Grandesse, L'Innocence, Alba Maxima, and Pair de l'Europe; Blues—King of the Blues, Baron Von Tuyl, Mimosa, General Havelock, Osar Peter, Lord Palmerston, and Marie; Reds—Prince Albert Victor, Vurbaak, Von Schiller, Lina, Lord Macaulay, and General Pellissier.

In Class 2 for eighteen Hyacinths, single spikes (nurserymen), there were four competitors, first honours again going to Messrs. Outbush & Sons, who staged a very superior collection; Messrs. Osborn & Sons, Fulham, having the second place with excellent examples—Lothair, Leviathan, Osar Peter, Ida, General Havelock, and Von Schiller being remarkably fine. Messrs. James Carter & Co., Crystal Palace Nursery, Perry Hill, being third with dwarf well-grown specimens, Starlight and King of the Blues being exceedingly effective.

In class 3, for twelve Hyacinths (amateurs), there were five competitors, Mr. Douglas worthily occupying his old premier position with plants not more remarkable for their fine spikes than for their bold green foliage. King of the Blues, Von Schiller, Blondin, Fabiola, Mont Blanc, Macaulay, and La Grandesse were the best in this collection, not omitting an unusually fine spike with immense bells of the double blue variety Van Speyk. Mr. Weir, gardener to Mrs. Hodgson, The Elms, Hampstead, was placed second; and Mr. Meerman, gardener to the Misses Christy, Ocombe Wood, Kingston-on-Thames, third with highly creditable collections.

In class 4, for six Hyacinths, new sorts never before exhibited, Messrs. Barr & Sugden were the only exhibitors; but with the exception of a semi-double white variety, Florence Nightingale, they were not superior, or equal, to older varieties. A second prize was awarded the collection.

In the nurserymen's class for twelve pots of Tulips in not less than six kinds, Messrs. Outbush & Sons and Barr & Sugden were the only exhibitors, and were placed in the order named. Both the collections were good, but the Highgate plants were the dwarfest and brightest. The sorts were Vermillion Brilliant, Yellow Pottelbakker, Canary Bird, Joost van Vondel, Proserpine and Keyser's Kroon. Messrs. Barr & Sugden also exhibited a good miscellaneous collection. In the corresponding class for amateurs Mr. Douglas was again in the first place with the best cultivated pots in the Exhibition, Mr. Weir having second honours with pots of great merit. Besides the sorts named in the previous class we note as superior Chrysolora, White Pottelbakker, Roi Pepin, and Queen of Violets.

The Cyclamen classes were very effective. In the class for thirty plants (open) the champion, Mr. Goddard, gardener to H. Little, Esq., Cambridge Villa, Twickenham, sustained his position with massive plants in 6-inch pots, in good condition and variety; Mr. Smith, Baling Dean Nursery, being placed second with smaller but very healthy plants and fine blooms. In the amateurs' class for twelve Cyclamens there were two competitors, each staging splendid plants, Mr. Goddard's being much the largest, and he was awarded the first place; second honours going to Mr. James, gardener to W. F. Watson, Esq., Isleworth, for healthy plants with fine flowers, but the plants were somewhat loose. In the corresponding class for nurserymen Mr. Smith was the only exhibitor, staging plants of remarkable compactness and profusion of bloom. They were worthily awarded the first prize.

For twelve Chinese Primulas, not less than four kinds (amateurs), Mr. James was the only exhibitor. His plants were remarkably vigorous and fine, especially Marquis of Lorne, red; and Princess Louise, white. The first prize was awarded. In the corresponding class for nurserymen, Mr. Dean, Baling, occupied the first place. Some of his varieties had a considerable amount

of scarlet in the flowers, and the blooms were fine and plants good. Messrs. Dobson & Sons, Isleworth, had the second place with good plants. They also exhibited a collection of small plants with unusually large trusses and good flowers. For six hardy Primroses (Acaulis type), single (open), Mr. Dean had the stage to himself. Crimson Banner, Queen of Violets, Fairy Queen, and Charming are the most distinct and best of the varieties. Mr. Dean also occupied the same position in the next class for six hardy Primroses (Polyanthus type, open), and also in the class for six double varieties of the Acaulis type, Double Rose, Double Blush, Double Purple, and Double Primrose are effective. In the Polyanthus type The Bride is the most distinct and useful variety, some of the others not being worthy of their names.

In the class for nine Cinerarias (nurserymen) there was no exhibitor, and in the next class for amateurs the only exhibitor of six plants was Mr. James. These were very dwarf and 18 inches in diameter, but not quite up to the veteran's best style. The varieties were Beauty of Ascot, Pandora, White Queen, Charles Bending, Agrippa, and William Reeves.

Some valuable miscellaneous groups of plants were staged, Messrs. Veitch as usual sustaining their position as growers and exhibitors. The collection of this firm alone made a charming display. It comprised upwards of seventy Roses in 7 and 8-inch pots, consisting of all the best varieties, the plants being singularly fresh and bright considering the earliness of the season and the late dull weather. Near them was a small group of Orchids, consisting of Dendrobies, Odontoglossa, Vandas, a fine plant of Dendrobium glumaceum, Trichopilia suavis in splendid form, Phalaenopsis, Masdevallias, and Cattleyas. Next in the group was a brilliant collection of Amaryllids, at the front of which were pots of Crocuses. They also staged a group of 120 Hyacinths, all in first-class exhibition form. Noticeable amongst them were Argus, blue, white eye, splendid, a great improvement on Lord Melville; Princess Mary of Cambridge, a splendid spike of silvery blue; Garibaldi, fine glowing red; Haydn, mauve; La Grandesse, magnificent white; Bird of Paradise, buff; Disraeli, light blue; Obelisque, yellow; Vurbaak, scarlet; Etta, salmon pink, most beautiful, charming in colour, fine in bells, and sweet; Madame Vander Hoop, massive bells; King of the Blues, rich and fine; General Havelock, fine, black-purple; Princess Beatrice, pale blue and white; Osar Peter, silvery blue; Fabiola, pink; Prince of Wales, pink; Duc de Malakoff, salmon pink, and Mont Blanc; also a hundred pots of Tulips healthy and bright, and good pots of Crocuses.

Mr. B. S. Williams staged a collection of considerable merit. The background was formed of Palms, which were brightened by good plants of Imantophyllum minimum and Phaius grandiflorus, the margin consisting of Orchids, Ferns, Amaryllides, Cyclamens, and Primulas, the last-named plants being exceedingly fine and all in the first condition, worthy of the Exhibition and of Holloway.

A very fresh, clean, and ornamental group of plants was staged by Messrs. Osborn & Son, Fulham. These consisted principally of Palms, Cycads, green Dracenas, having as a front margin fine-foliaged and table plants. Messrs. Osborn also had a collection of fifty Hyacinths, some of the spikes being very fine and all of good average excellence. Messrs. James Carter also staged fifty Hyacinths of superior quality.

Messrs. Rolleston & Sons, Tooting, staged a thoroughly distinct and striking collection consisting of eighteen plants of the floriferous Azalea mollis, about three dozen plants of Boronia megastigma spangled with a profusion of brown bells, and the singular and elegant Grevillea Priessii which was recently awarded a first-class certificate.

Mr. William Paul, Waltham Cross, staged seven boxes containing 120 blooms of Camellias. These flowers, nestling in moss and surrounded with glossy foliage, produced a charming effect. They consisted of the best varieties in cultivation, from the purest white to the richest scarlet, and many pink and white-striped flowers of great merit. We never saw boxes of Roses more attractive than this choice collection of Camellia blooms in upwards of fifty varieties.

Mr. R. Parker, Tooting, exhibited a group of hardy plants, which always attract attention by their distinct forms and charming colours. Iris reticulata was very fine, Helleborus colchicus and H. guttatus, Scilla bifolia rubra very charming, Apocynon distachyon, Hepaticas of sorts, and Primula acauliserulea, a delicate lavender-coloured variety, were the most noteworthy in this collection. Mr. Aldous, florist, Gloucester Road, staged a very gay collection; the Cyclamens, Lilies, Dendrobies, Palms, and other fine-foliaged plants being effective.

A very fine collection of well-kept Apples and Pears comprising about one hundred dishes, also a fruit of the variegated Pine Apple, was exhibited by Mr. Ford, gardener to W. H. Hubbard, Esq., Leonardale, Horsham, and a silver medal was awarded. A similar award was also made to Mr. Wm. Paul for a meritorious collection of fruit.

A gold medal was awarded to Messrs. Veitch & Sons for Hyacinths, Orchids, and Roses; and silver medals were awarded to

Mr. B. S. Williams, Messrs. Rollisson & Sons, Messrs. Osborn and Sons, and Mr. Aldous for collections of plants; and to Mr. W. Paul for boxes of Camellias.

FRUIT COMMITTEE.—Henry Webb, Esq., in the chair. Mr. William Horley, Toddington, Beds, sent a seedling Apple, which was so much past its best that no opinion could be formed of its merits. Mr. W. C. Pearce, Wicken Villa, Stony Stratford, sent a seedling Apple which was also past its best. Mr. William Paul exhibited a seedling Apple which appeared to possess some merit, but it was past its best, and which it would be desirable to see again. Mr. Miles of Wycombe Abbey exhibited a very fine dish of Cockle's Pippin. Messrs. Hooper & Co. of Covent Garden sent a dish of Alpha Potatoes, which were produced by forcing in the space of two months. The tubers were planted on the 18th January last, and the crop lifted on the 7th March; they were grown in pots in a cool house. Mr. Douglas, Loxford Hall, Essex, sent fruit of St. Michael's Orange grown in a cucumber house at 70° temperature, and they were pronounced to be of the finest flavour. A cultural commendation was awarded. Mr. Douglas also exhibited an Orange tree in a pot, very healthy and bearing thirty ripe fruits.

Dr. Hogg expounded his new classification of Apples, which met with the approval of the Committee, and a recommendation was made to the Council to award a medal to Dr. Hogg for his discovery.

FLORAL COMMITTEE.—R. B. Postans, Esq., in the chair. Messrs. J. Veitch & Sons exhibited seven new hybrid Amaryllises. The best of the batch was Thalia, a magnificent flower of immense proportions and extraordinary breadth of petals. The flowers are 8 inches across, and the petals 2½ inches wide; the colour is crimson, with a purple shade in the centre of the petals; the base of the cup is greenish white. Fine as are the other flowers raised by the Messrs. Veitch, this variety far surpasses them all. Ohio is also a very fine flower, more approaching the "florist" type than any of the others. It is of large size, with the scarlet shade predominating. The above two varieties had first-class certificates awarded to them. The same firm had first-class certificates for Abutilon Darwinii tessellata, a very ornamental variety, having foliage with the markings of A. marmorata and flowering freely in a dwarf state, and Phalaenopsis Veitchii, an undoubted natural hybrid between P. Schilleriana and P. rosea. The leaves have the markings of P. Schilleriana, and the flowers have the characteristics of that species in the markings of the labellum and formation of the lip. Odonoglossum Chestertonii is evidently a natural hybrid from New Grenada and allied to O. Andersonianum; the flowers are well shaped, creamy white with bold brown blotches. Hyacinth Sultan is the best of the dark purple flowers; it has fine-shaped bells and an immense spike. The Shah, light purple, fine bells, close spike. Golden Lion is decidedly the best single yellow; it has fine bells and a close compact spike. All the above received first-class certificates. Messrs. Veitch also exhibited Princess Beatrice, single pale blue, a very fine Hyacinth in the way of Grand Lilas, and Venus de Medici, which is one of the best double Hyacinths. The flowers are rose changing to salmon as they become older.

Dendrobium Heyneanum, and a species of Spathoglottis with drooping primrose flowers were sent by Sir Trevor Lawrence, Bart., Burford Lodge, Dorking. The former had dense clusters of white flowers and would be useful for cutting; a vote of thanks was awarded. Rhododendron Fisher Holmes was sent by Messrs. Fisher Holmes & Co., Sheffield; it is allied to R. Edgworthii, but has smaller leaves. New Hyacinths were sent by Messrs. Outbush of Highgate, but the trusses were too small to judge of their character. Messrs. Carter of High Holborn sent a basket of Primrose Lady A. T aylour; it is the same plant that has usually been grown as P. altaica.

Ornithidium coccineum, an Orchidaceous plant with small scarlet flowers, was sent by Mr. Denning, gardener to Lord Londesborough.

Messrs. Thibaut & Keteleer, nurserymen, Soaux, France, sent a deciduous flowering shrub of striking beauty named Xanthoerans sorbifolia. The young green foliage, like a miniature form of the Mountain Ash, partly encircles dense spikes 5 inches long of bluish white flowers. As a forcing shrub it has claims of undoubted value, and cannot fail to rise rapidly into public favour. A first-class certificate was deservedly awarded. Mr. W. Paul, Waltham Cross, sent a box of twenty-four varieties of out Roses, very charming; and a vote of thanks was awarded. Mr. Goddard was awarded a first-class certificate for Cyclamen persicum Purple Gem, a splendid variety of singularly rich colour, the flowers also possessing good form. Mr. Edward Bennett, Rabley Nursery, sent Cyclamen Ruby, very large; and striata, a mottled variety. Mr. Dean sent a collection of hardy Primroses, but they were not sufficiently distinct to merit notice; names of Primroses are being somewhat unnecessarily extended.

A botanical certificate was awarded to G. F. Wilson, Esq., F.R.S., Heatherbank, Weybridge, for Claytonia caroliniana, a plant from the Rocky Mountains—a little alpine gem. Mr. Wilson also sent Primula viscosa and Scilla bifolia. Mr. Smith, Edmonton, sent new bedding Geranium Goldfinch.

Mr. Ollerhead, gardener to Sir H. Peck, Bart, Wimbledon House, sent plants which had been recently imported of Dendrobium Wardianum and lituiflorum, each having two fine spikes with splendid flowers; also Phalaenopsis Schilleriana, very fine. A vote of thanks was awarded.

INTRODUCTION OF THE MOSS ROSE.

FOR AN answer to an "INQUIRY" we have referred to many old authorities, and the results of our search are that Parkinson in his "Paradise" published in 1629, Bea in his "Flora" published in 1665, and Bauhin in his "Pinax" published in 1671, enumerate many Roses, but the Moss is not among them. It was introduced or raised in Holland probably at the close of the seventeenth century, for Dr. Martyn in his edition of Miller's "Gardeners' Dictionary" says it is in Furber's catalogue in 1724. We have seen a copy dated 1727; it is entitled "Catalogue of English and Foreign Trees Collected, Increased, and Sold by Robert Furber at his Nursery over-against the Park-Gate at Kensington, near London."

Faulkner in his "History of Fulham" says that Mr. Bench was the first to introduce the Moss Rose into this country, the original plant of which is supposed to have been brought from Holland. Bench lived at South Field Farm near Parson's Green, a farm possessed by his family for two centuries. He was buried in Fulham churchyard, where there is this inscription to his memory on a headstone—"Under this stone are deposited the remains of Nathaniel Bench, late of this parish, gardener, who departed this life Jan. 18th, 1783, aged 101 years." So he may have introduced the Rose before 1724, for in that year he was forty-two years old.

The Moss Rose was first portraited in the "Botanical Magazine," plate 69. It is described as the *Rosa muscosa*, or Moss Rose, and the plate is dated December 1788. Mr. Curtis observes that, though Miller thought it a distinct species, Linnaeus considered it only a variety of *Rosa centifolia*.

RIPENING PEARS.

I SEE by letters in this Journal that my opinion of the Hawthornden Apple tree is corroborated by several correspondents, and I regret that such should be the case, as the Apple is a useful one, especially for cottage gardens.

The discussion of the subject may be of service and produce a remedy. For example, that excellent Pear the Jargonelle is so subject to canker that in some parts of the country it has been abandoned; but a panacea for this evil has been discovered, I believe by Mr. Rivers, to whom we are indebted for many new and good fruits. The Jargonelle, he tells us, by being grafted on the Beurré d'Amanlis will be rendered healthy.

In regard to ripening of Beurré Diel Pear, I have a tree in a sheltered situation on a south wall which has borne large crops every year for seven years past, which have never failed to ripen from October to the end of November. This last season two of the Pears off this tree did not turn yellow till December, and were eaten on New Year's day; they were ripe, but their flavour was not equal to those from the same tree which were ripe in November.

I once saw a recommendation in this Journal from a correspondent (in reply to a complaint about the non-ripening of Knight's Monarch Pear, Brown Beurré ditto) to bury the said Pears in a jar or large flower pot in their own leaves in a cellar for a month or more before bringing them into the dry fruit room. Has this plan been tried? In my early youth I used to treat wild Crab Apples somewhat in that fashion with excellent results—viz., making a hole in a haystack and burying the said Crabs, which when exhumed some two months afterwards had lost their sourness and roughness and become sweet, and not in the least withered or wrinkled. I will not affirm, however, that there was not a taste of hay on them. I ought to mention that my garden lies 450 feet above high-water mark.

Having seen the then new Apple called the Washington highly recommended in several catalogues (Mr. Rivers' among the rest), I wrote to request him to send me one, which he did some two years ago; it bore two or three Apples last season,

and fully maintained its character for flavour, &c. Can you tell me if it has any synonym; or if not, why it should be entirely unnoticed in the new edition of the "Fruit Manual?" Several Apples quite as novel are mentioned in it.—O. E.

NOTES AND GLEANINGS.

In the programme of Exhibitions announced to be held at the Royal Botanic Gardens, Regent's Park, is included an EXHIBITION OF FLOWER BEDS. This is to be held from June 1st to 8th, the prizes being offered by His Serene Highness the Duke of Teck, G.C.B., and the Society. "These designs for geometric and other flower beds and borders are to be laid in actual beds of the natural size on the lawn, and composed of living plants in pots plunged in sand." The new wing of the conservatory is to be opened on the first day of this Exhibition.

— *ABUTILON BOULE DE NEIGE*, which is effective as a sub-tropical decorative plant for the flower garden in summer, is perhaps still more valuable for affording a supply of cut flowers during the winter and early spring months. If the plants are kept growing in a genial temperature they will produce flowers freely at every joint, and these flowers are even more pure in the winter than they are in the summer. They are very valuable for bouquets, vases, &c., and keep fresh for a considerable time in water. White flowers are always in demand, and few plants will produce them more easily and certainly than this chaste white *Abutilon*. Cuttings struck at the present time will make fine plants for flowering in winter.

— *BEGONIA NITIDA* is a valuable old winter and spring-flowering plant, but of a somewhat loose and straggling habit of growth. This characteristic of the plant has been turned to account in an effective manner by Mr. Ollerhead in one of the stoves at Wimbledon House. Plants of this *Begonia* are there grown in large pots, and the shoots are trained to wires on the back wall. This wall is about 9 feet in height, and is completely covered with shining foliage and immense trusses of pinkish white flowers. There are many fine wall and climbing plants in the houses at Wimbledon, but none are nearly so striking at the present time as this *Begonia*. The plants have been flowering all the winter. This beautiful wall of *Begonias* expresses a happy idea well carried out, and is worthy of imitation.

— The gardens at LOXFORD HALL are always both attractive and instructive. In the conservatory the *Camellias* Jubilee, Alba plena, and Fimbriata are in splendid health and bloom, their white flowers being enhanced by the juxtaposition of large plants of *Donkelaarri* and *Chandlerii*. As white *Camellias* the sorts named should be in all collections. The greenhouse is exceedingly gay, the *Hyacinths* and *Tulips* being in "exhibition form;" very beautiful also is *Iris siberica*, while *Primula nivalis* is charming. The vineries also are very promising, the foliage of the Vines being thinly trained, very healthy, and scrupulously clean. The Black Hamburg house, which has produced more "first-prize" fruit than perhaps any house of its size in England, is not this year likely to perfect bunches quite so large as usual; but the adjoining Muscat house is showing a splendid crop. The berries have set as freely as Black Hamburgs, even the Canon Hall Muscat having several full bunches. There is something of interest also for *Auricula* growers. Never were the Loxford plants in better condition. But more noticeable than the established plants are the fine batches of seedlings. Many of these are showing their first trusses, and other seedlings are springing up as "thick as Oress." From the fact that these seedlings are the result of intercrossing the best varieties, and especially varieties that have proved to be the best "breeders," something really new and good may be anticipated. The fruit crops indoors and out are highly promising, and good gardening and neatness everywhere prevail. A stroll through the houses and gardens at Loxford attests that Mr. Douglas practises all that he teaches.

— A VERY good authority, resident in Cornwall and in a district where RABBITS abound, says that they will NOT EAT ANY OF THE LILIES. They occasionally nibble off a leaf, but the flavour is not agreeable to them, and they leave it.

— THE WIMBLEDON GARDENERS' SOCIETY held their third meeting in the Lecture Hall on Wednesday evening, March 8th, Mr. Lyne, gardener to A. Schlusser, Esq., Belvedere, in the chair. Mr. Jordan read a paper on the cultivation of *Eucharis amazonica*; after which Mr. Ollerhead read a short article on the same subject, which led to a very pleasant discussion. Mr.

Ollerhead also read a paper on the cultivation of *Asalea indica*, which created a spirited debate. [We shall publish this paper next week.] Votes of thanks to the Chairman, Mr. Jordan, and Mr. Ollerhead, brought a very enjoyable evening to a close. Several new members have joined the Society.

— THE nineteenth annual Exhibition of the CLAY CROSS HORTICULTURAL SOCIETY is announced to be held on August 15th. Prizes of £25, £20, £15, £10, and £5 are offered for twenty plants, the competition being "open to all England." The total amount offered in prizes is £863. Mr. Stollard is the Secretary.

— YORKSHIRE has long been noted for the excellence of its horticultural exhibitions, and many successful gatherings are anticipated during the ensuing season. Tempting schedules are arranged by the LEECHES and YORK SOCIETIES, the Exhibition of the former commencing on June 28th, with prizes amounting to £500; and of the latter the "grand floral fête" commencing on June 16th, when nearly £600 will be offered in prizes.

— In the "Annales de Chimie et de Physique" for January, M. Dumas has a valuable paper entitled "STUDIES ON PHYLLOXERA AND SULPHO-CARBONATES," which may be taken as representing the present state of the Phylloxera question. His conclusions are briefly as follows: With regard to the Phylloxera of the roots—1, Sulpho-carbonate of potassium is a rapid insecticide, the only one which surely destroys the insect at the roots, and also supplies to the Vine a strong reconstituent element. 2, Sulpho-carbonate of sodium offers the same advantages used only as insecticide. 3, Sulpho-carbonate of barium, being anhydrous and little soluble, is recommended for its resistance to the action of oxygen and of carbonic acid, so that it is a poison less prompt but more durable in effect. With regard to the winter eggs—4, The heavy oil of gas tar, and especially the oil called anthracene, seem to be best for washing the stocks and destroying the eggs. 5, The treatment with tar for the stocks and sulpho-carbonates for the roots, should be effected especially in February and March.

— A good authority writes to us, "Do not advise your readers to make the CEMENT in the way described by the 'Engineer' (page 198), for if they follow the instructions therein specified they will soon find to their cost that split sockets are rather expensive to replace, while the annoyance and risk attending leaky joints will cause much anxiety to the proprietor. Better by far advocate the use of indiarubber ring joints, which can be used in any sockets of hot-water pipes, even those immediately next the boiler, and are perfectly water-tight even under severe pressure."

GUINEA FELLOWS OF THE ROYAL HORTICULTURAL SOCIETY.

In the verbatim account of the proceedings of the Royal Horticultural Society's last meeting, furnished by our Journal, there is one remark made by Mr. Wilson (I presume the 'Lily Wilson'), which is of much interest to horticulturists living in the country. He proposes that country Fellows shall be admitted on a payment of one guinea per annum. At present we pay two guineas, and I think that such a sum is out of all proportion to the benefits which we receive from being Fellows. Take my case for instance. I never go near South Kensington except on the day of the Rose Show (and this year there is no proper exhibition of that flower). My pass as an exhibitor admits me, so I really gain no advantage except that I can go and read, and I suppose write, in the reading-room if I know where to find it; but as I never knew there was one until I saw it mentioned in the list of privileges of Fellows I have not, as can be easily imagined, availed myself as yet of that privilege. I cannot send a ticket for the Rose Show to any friend, because the packet of tickets only admits on days when there is nothing to see or hear. These packets, too, are now things of the past.

I rejoice exceedingly that there is a chance now of the Society's tiding over its difficulties, and I cannot but think that a liberal treatment of country Fellows would do more to help the Society than anything else. The principle of making a difference between the subscription of town and country members is already acknowledged by a few of the clubs, and should be ceded by all. There are numbers of men who would pay a guinea who will not pay two guineas. The Royal Agricultural Society, of which I am a Fellow, only

requires a guinea subscription, and for that you have the same privileges as at the Royal Horticultural Society.

I hope, therefore, the Council will adopt Mr. Wilson's suggestion, for I feel confident that if they do the accession of new Fellows will be large.—JOHN B. M. CAMM.

SIMPLICITY OF ARRANGEMENT IN FLOWER BEDS.

A HEXAGON—A BORDER—A SCROLL.

For a copyist of the somewhat complicated designs of the carpet beds in the public gardens of the metropolis to be really successful, it is indispensable that he should possess an abundant stock of plants and sufficient knowledge of geometry to enable him to trace the figures with accuracy. Given these, with a certain amount of manipulative skill and good taste, there is no reason why a private garden may not equal or even excel any of the public gardens, as was so strikingly demonstrated by Mr. Legg at Cleveland House last season. In the majority of small gardens, however, such facilities do not exist; restricted means, such as want of space under glass, and perhaps only a factotum to make the most of that space, quite preclude any such ambitious attempts; the proprietors acting wisely and well to confine their efforts to a few good sorts of plants, not necessarily the newest or most fashionable, blended together in simple designs, easily arranged and kept in order. Under such a guise their gardens are much more beautiful, and—mark the term!—really enjoyable than they could be under a more elaborate but less successful system of decoration.

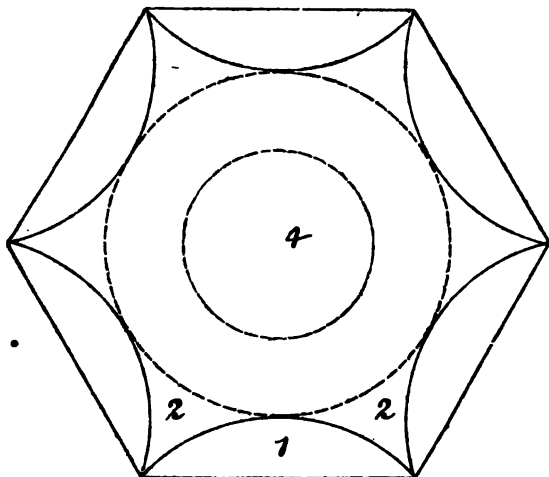


Fig. 66.

SUMMER.

- | | |
|--------------------------------------|------------------------------|
| 1. <i>Echeveria secunda</i> glauca. | 8. Golden Pyrethrum. |
| 2. <i>Alternanthera versicolor</i> . | 4. <i>Lobelia speciosa</i> . |

WINTER.

1. *Sedum glaucum*, dotted with blue Crocus.
2. *Sempervivum californicum*, with white Crocus.
3. *Ajuga reptans* and yellow Crocus.
4. Golden Pyrethrum and deep purple Crocus.

SPRING.

1. *Saponaria calabrica*, with the entire centre of *Myosotis sylvatica*. The planting of these to immediately follow the flowering of the Crocus.

The class of gardens to which I allude is an extensive one, much more so than those in the hands of skilled practitioners, and I am very much afraid that one's ideas often take so high a flight as to pass quite over the heads of very many whom one would really wish to assist; so I am now going to try and forget Kew, Battersea, and the Crystal Palace, and to offer a few plain hints concerning flower beds simple in design, and containing plants not very new but of easy culture, yet which, taken apart from the merit of novelty, are no unworthy rivals of the latest "sensations," whatever that may be.

"T. O. J." has three beds, a hexagon, a plain scroll, and a parallelogram of 80 feet by 8. We shall, therefore, strive to answer the queries of our correspondent, and also impart information to others, by explaining something of what may be done to embellish each of these beds in spring, summer, and

winter. Figs. 66 and 67 set forth so plainly the planting of a hexagon that no descriptive note is called for.

Although a border of 8 feet is somewhat narrow, it yet affords scope for so many simple designs as to ensure the requisite annual change. Beginning with the straight lines of a formal ribbon pattern, we could manage four distinct bands of blue, grey, crimson, and yellow; or grey, blue, pink and white, ranging through a variety of shades of those colours, taking good care to graduate the plants with reference to their growth from back to front, or from sides to centre. For example, a border along the verge of a shrub belt might have *Mesembryanthemum cordifolium variegatum* with its charming pale yellow variegation for the front line; next might come the deep crimson *Iresine*, then the brightly grey *Leucophyton Brownii*, or the soft grey *Gnaphalium lanatum*, with the purple-leaved *Chenopodium Atriplicis* or the elegant *Humea elegans* behind. If the border stands out upon turf it might have a margin of *Mesembryanthemum* with an inner line of silvery grey, such as *Cineraria maritima* or *Centaurea rugosina*, with a centre of any favourite kind of scarlet *Lobelia*—always ornamental with crimson stems and foliage of a deeper hue, and imparting much life and brilliancy to a design in autumn, when the flowers of rich liquid scarlet expand abundantly.

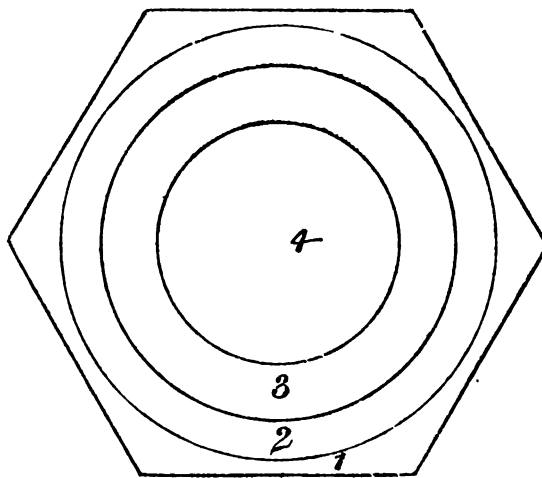


Fig. 67.

SUMMER.

1. *Alternanthera amoena*.
2. *Sedum glaucum*, dotted with *Nertera depressa*.
3. *Coleus Verschaffeltii splendens*.
4. Blue *Lobelia*, dotted with *Fuchsia Sunray*.

WINTER.

1. *Sedum glaucum*, with a single specimen of *Saxifraga longifolia* in centre of angles.
 2. *Sempervivum montanum*.
 3. *Sempervivum californicum*.
 4. *Saxifraga nepalensis*.
- This arrangement can of course be dotted with bulbs.

SPRING.

- | | |
|---------------------------------|--------------------------------|
| 1. <i>Nemophila insignis</i> . | 3. <i>Silene pendula</i> alba. |
| 2. <i>Saponaria calabrica</i> . | 4. <i>Myosotis sylvatica</i> . |

As a relief and change from the monotony of straight lines we could form a curved or serpentine band flowing gracefully from end to end of the border along its centre, and yet with its outer curves just touching the sides, which might have an edging of one row of plants of a small glaucous *Echeveria*. The serpentine band would thus form a number of semi-circular spaces, which could be filled with suitable plants. We might have a curved band of *Coleuses* with alternating semicircles of a Golden Tricolor *Geranium* and blue *Lobelia*; or a band of *Polemonium caeruleum variegatum* with pink and blue patches along the sides; or a grey band with any shade of rose, pink, carmine, blue, lilac, or crimson along the sides. A serpentine band of pink *Geranium* Master Christine, with semicircles of the dwarf white variegated *Geranium Little Trot* with its flowers kept picked off would form a charming bed, the combination being more chaste and lovely than almost any other. Such simple yet effective combinations may be wrought out in almost endless variety.

I cannot now afford the time to dwell upon the great beauty

of mixed borders, but I may say to those lacking enough plants for a regular design, Put your plants in irregular order in the bed, intermingling them with clumps of Mignonette, Sweet Peas, Asters, Stocks, and annuals of all kinds, and you will very likely congratulate yourself upon the fine outcome of your necessity, and it is not improbable that you will cling to your mixed border ever afterwards.

A simple scroll bed really calls for very little detail. A margin of *Santolina incana* with a centre of *Alternanthera amœna* would form a lovely carpet. Change it any way you please, having an edging of succulents, with inner rows or bands, only take care to make the central colour predominate. Edgings and bands of succulents are always neat and impart a high finish to a bed.

If you ask what I recommend, I respond, What is your taste? For a rule I can safely venture to tell you not to put a green-leaved succulent plant like *Sempervivum montanum* next to turf, but prefer the dark-tipped *S. californicum* or the pretty yellow and green *Sedum acre elegans*. The pearly *Sedum glaucum* dotted with any of the larger succulent rosette forms is a charming margin, and the blue-leaved *Kleinia repens* is quite one of the best plants as an inner row to it. For winter take the hardy succulents for a carpet, dotting them with bulbs; or you may follow the summer plants with *Silene*, *Myosotis*, *Saponaria*, *Alyssum*, &c.

One word more. If you require an emerald summer carpet take the bright green-leaved *Cerastium arvense*, which was so effective at Battersea last season, and you will attain your object without the incessant care in pinching which is required when *Tagetes* is used.—EDWARD LUCKHURST.

ABOUT POTATOES.

THE idea of March, and not a word of advice given concerning the planting or about Potatoes in the *Journal of Horticulture* this week! "Zounds, my Lords!" At least, that is what Queen Elizabeth is reported to have exclaimed when threatening to revert to her "old Latin" to reinstate a state of things more agreeable to her. I fear, though, for me to revert *apropos* to Potato culture may cause many readers to exclaim, "Oh, ah! old Fenn, you know!" Nevertheless, the apparent nonchalance of the old *Cottage Gardener* in thus excluding a most important matter, at this season especially, makes me arise to supply a blank and to tell how "old Fenn" is just a trifle new. Of course my ground is bastard-trenched, and the manure compost at once worked into the body of the soil as of old, and not allowed to lie on the surface to waste its ammonia in the desert air. No one, young or old (as I find the subject is cropping up again), will persuade me to depart from that practice. I have not had the gaps ground out of my glaive since the battle with Mr. Pearson on the subject, as the blade is become rather worn by being so often resharpened of yore when upholding the ridge-and-trench cultivation of Potatoes. I have no cause to do that now, as the plan has champions galore.

My practice is still to plant upon the surface at 42 inches apart in garden ground, and 8 feet in the field, proceeding to work by merely casting out a couple of inches of soil longitudinally as a shallow drill in which to place the first row of sets, then measure and strain a line, and cast out the soil as before with the spade (or what is better, with a shovel perfectly square at the bottom of its blade) over the sets in the first row, and so on consecutively till the ground is planted. Watch for the first peeping-out of the young shoots, preparatory for which I last year caused some half-worn-out shovels to have their lower corners cut-off at the blacksmith's, and then made red-hot, and to become slightly rounded—formed, in fact, into shovel-scoops.

At the first sign of the leaves breaking into the light of day strain a line from end to end exactly over the row of Potatoes; then, centrally from between the rows, scoop up with the instrument just mentioned, and cover over the line about 2 inches deep with dry friable soil, and so make sure of covering over head and ears, not only those young shoots already apparent, but those others which are not yet visible, but which we may be sure are just about to become so. The line is easily jerked from its bed out of this first slight moulding to become adjusted, and strained over the next row of sets, and so on. A quantity of such work can be done in a day; and what is more, it is certain safety for the young shoots in the event of frosts so likely to happen now, and at the same time it suits the crop so well.

The next operation is to walk backwards and apply a Parke's fork right and left, or up on one side and down the other, of the rows, turning the soil up ridgeways about 9 inches from the sets, so as to leave them growing in a valley, so to speak, 18 inches wide. Their shoots will presently be seen again in line along the centre of these valleys, bursting through their first slight mouldings. And now again no time must be lost, on account of the fear of the frosts, of moulding-up again. It is to be done also with the shovel-scoops, more friable soil being added this time by filling-up the valleys to a level surface, which were formed by the forking; and for their third and final mouldings, when the shoots are again sufficiently grown, the forks may be again applied if the soil is sufficiently holding for them to bite it, or the trenches sufficiently wide to admit them (I use four-tined forks for this final moulding), otherwise, if the soil is too light or crumbling, the shovel-scoops answer admirably. Thus we complete the ridge and form the trench, and so leave the Potatoes to cater for themselves in the future, in the meantime of course eradicating all weeds as they grow; and if the Potatoes are subject to berry I pick off the blossoms. It is very possible, though, for late frosts to threaten us, and when they do the shovel-scoops will prove instant agents to scatter fine soil amongst the foliage from the bottoms of the trenches as a part protective now, as of course moulding overhead from increase of growth is out of the question; still dusty soil scattered over and about the foliage is a protective, and often sufficient to save from slight frosts. The look and feel of the day will generally warn when a frost may be expected at night, and a whole square of Potatoes can have dusty soil slightly scooped from the bottom of the trenches during an afternoon, and in so doing the shovel-scoops will not by reason of their rounded blades endanger the ridges by cutting into their bases. I consider the above culture by giving extra tilth and permeable texture to the soil a great improvement for the ridge-and-trench system.

Again, in lieu of occupying every trench immediately after the above operations (or so soon as the Potatoes are safe from the frosts) with Brussels Sprouts or other of the Brassicas, skip every other trench, for the purpose of walking up and down unobstructedly, for when bent upon examinations of the Potatoes the mind becomes diverted from the plants in the trench and many of them suffer by being trampled upon. This alternate occupation allows also a clear path to work in when forking out the Potatoes from two ridges, or facility when the disease smites the foliage to turn the haulm from two ridges pell-mell into the unoccupied trench. Some advisers seem to fancy this will prevent the disease-spores being washed down to the Potatoes. I forget who it was some years ago that first mooted this recommendation in these pages. I tried it a few times, but to reap no benefit from it. Mr. Fish of Hardwicke recommended a field roller to pass over the tops. I tried a garden roller, but without satisfaction. I think, in short, I have tried almost everything that has been recommended from time to time excepting Mr. Hibberd's "tile." I have not capacity sufficient for that. I trust no more to experimental preventives other than what I have mentioned above; and as soon as the haulm becomes stricken by disease up come my Potatoes. Of this anon, as I fulfil a promise I made to you last June, page 490, when I detailed the behaviour of my crops and said I would write you again when I had experienced the worst that was likely to happen to them.

Three-fourths of my American sorts had then already succumbed to the new phase, and two-thirds of those which were left had a *Peronospora* quietus, thus proving a most unfortunate enterprise for me. None of my English kinds were attacked by the early curl, but I could have pointed out to you whole plots of some English sorts in this neighbourhood with bad symptoms of our old English friend "Bobbins Joans" accruing from seed which I knew had been heated in heaps, badly grown out, then spurted, and afterwards cut into sets, and I know this old plan is not uncommon even now; therefore we must not always jump to a conclusion as most people did concerning the above, and lump the two features together as being derived from the same cause.

Well, I told you in No. 743 how I came to rent some gardens in old Woodstock last spring. Temporarily, too, in regard to having to move my family I took the house attached to the gardens—and it is a house with a history, by consequence of containing the room in which Edward the Black Prince was born; and it may be interesting to you when I say it looks on to the house and garden where once lived Kemster the cobbler, who raised the Blenheim Orange Pippin. I remember

the last days of the tree, but I was not in time to secure a fragment of it as a memento when I learnt it was cut down—the fire had done its work on the rare old trunk. It is rather remarkable that Haigh and Kemster, both cobblers, should have handed down to us one of the best Potatoes and one of the best Apples that we possess. Peace to their manes! But I thought it rather hard when I read “Blenheim Orange,” monopolising the name, and poor old Kemster put down in the middle of a lot of aliases in a contemporary a few weeks since. Such is the way of the world. I have been led into a digression, but I made mention of my house more than anything else for analogy of soil with my other holdings; and we may presume the gardens belonging to it have been under some sort of cultivation verging upon six hundred years. I had the ground bastard-trenched and composted well with a collection of dry-earth-closet soil, and just before I planted the Potatoes had it surfaced with lime quick from the kiln at the rate of a hundred bushels per acre. One garden I reserved for the Americans, and in the other I grew my new four-year-old seedlings now under probation, and had both gardens under the ridge-and-trench plan. No Potatoes could have given greater promise than my new seedlings, and if the season had kept on propitiously I should have tried to have bribed you to come and see them; but fully three weeks before they had arrived at their prime the rains descended and the disease smote them in the haulm, which caused me to “pipe all hands” and have the tubers out of the ground, wet or dry as we could, and as quickly as possible, or you may depend upon it I should not now have so fine a sample of seed to look upon as I possess, comprising the one-third out of the American sorts; and I lost about one-sixth of my seedlings from old Woodstock, if loss it can be called, as I boiled down every specked tuber directly after they were taken up, slightly salted them, rammed them into an old water-barrel, and kept a keen eye upon the sound stock as they lay thinly spread-out in a loft. By thus proceeding I did not have two pecks of my English sorts all through the season that were unuseable, and those I burnt in the copper furnace to assist in boiling their less affected prototypes.

After finishing the garden liftings I immediately turned my attention to the fields, as the haulm of my seedlings there was becoming affected. I found the tubers much worse diseased there than they were in my garden grounds. This caused me again “to pipe all hands,” and fork all out with the utmost dispatch possible, the ridges and the unoccupied alternate trenches facilitating admirably. On visiting the diggers next day I was most agreeably surprised, for, excepting about a dozen square yards at each of the places I previously probed, the Potatoes were nearly free from the murrain. Upon inquiry I learned that upon those superficies I made probing upon, near to the gate, had been “shot” some loads of crude night soil a year or so previously. Nevertheless, I told the men to keep on taking-up the Potatoes as sprinklings of diseased tubers kept making themselves manifest. I had in result, however, good cause for congratulation. My Onwards seedling turned out the finest crop I ever had of it, and my Bountiful along with it, and also a good many sorts of my newer seedlings were quite free, and a finer lot of Rector of Woodstock could not be—too large in their tubers, in fact, taken as a whole to please me, as I care more for a gentleman's table than I do for a lot of huge samples to astonish the natives upon the exhibition table. Thus ends the history of this field. Stay, not quite so. My very good neighbour Mr. Godden accommodates me by letting me have about an acre of land near home to prove my seedlings upon. Now he had growing in the same field not 100 yards from my plot a large plot of Rector of Woodstock, planted according to the custom of the neighbourhood. His seed was good, and it had been properly kept in single layers and cared for throughout, but to no purpose; the disease smote the haulm, but the Potatoes being planted on the flat too close together, and withal allowed to remain in the ground till the haulm was withered and gone, I do not think my friend was enabled to secure more than a third of the crop in a sound condition. And this was the same with several other kinds, comprising Breadfruit, Lapstones, Paterson's Victorias, Bessie's Prolific, &c., on the same ground. I mention this circumstance hoping it may meet the eyes of your correspondent the “DUNBAR REGENT,” and also in order to re-assure “D., Deal,” from whom I ask pardon for addressing as “Mr. Deal” when I met him last autumn at the Alexandra Palace.

Again I had last season another large plot of Potatoes much farther afield on the stonebrash, a poor soil which it

runneth not in memory of ever having Potatoes grown there before. I grew mine there specially for seed, and calculated from the circumstances to secure a healthy crop. Not so, however. They were stricken in their haulm as soon and as badly as any, and the tubers became the worst afflicted by consequence of our not being able to take them up till those nearer home out of richer soil were completed lifting. Now here is a moral. Of late years I find that when Potatoes are left in the ground after they are ripe, if their haulm has been ever so free from disease the tubers will incur disease more or less. They may look all right, and they won't go rotten to signify for eating, still they will have contracted disease—zoo-spores, resting spores. But under the operations of the knife when in use for culinary purposes, internal mealy black spots can frequently be detected throughout their whole internal tissue, but never in those that are taken up early from the soil and before they become quite ripe; and this at any rate warns us not to choose our seed but from early-lifted tubers. I observed when cutting my American Potatoes into sets (large tubers must be cut for planting) last spring, a great many of them looked very mealy as above. I destroyed those showing thus, for although it was before Mr. Worthington Smith had enlightened us I knew it could not be a healthy sign. Those of them which I did plant were of course affected, though not sufficiently so to be detected by the naked eye. I grew the seed myself excepting one sort, the Thorburn's Paragon; and the year before last I left my Potatoes longer in the ground than usual, on account of this freedom from disease and in anticipation of a party of friends coming on a journey of inspection. This was the cause of my American seed becoming spotted, and these spots I strongly suspect are Mr. Worthington Smith's resting spores, and these resting spores came early to life last spring. If the above surmises of mine are correct, and our scientific guides can soon enlighten us, Potato culture can be made soon to resolve itself into more certainty by using seed not perfectly ripened (or even very unripe indeed, such as I showed at the Royal Horticultural Society's Summer Exhibition at Bury St. Edmunds, and planted and wrote advice about the following season). Secure good tilth; take care of the seed during winter by storing it in singly in layers; use early-ripening sorts as a rule; plant on the ridge-and-trench plan; place on good holding soil, and lift the moment the disease strikes the haulm; and here we are beginning to resolve the cultivation of Potatoes into a nutshell.—ROBERT FENN.

OUR BORDER FLOWERS—CUDWEEDS.

Nor very numerous are the members of this family of plants, but there is much about them that is interesting to the cultivator of border flowers, and both on festive and mournful occasions they assist us in accomplishing our designs, and are attractive and emblematical. Seldom do we meet with these plants receiving careful cultivation, but they are generally left to take their chance in obscure corners. It ought not so to be, for there is merit in some of our old favourites the Everlastings. I have often admired a Clover field studded over with *Gnaphalium germanicum*, with its erect habit and woolly appearance; but more attractive still is *Gnaphalium margaritaceum*. If left to its own way it is of straggling habit, but neatly staked it becomes a fine border plant, and requires room to develop itself. It continues long in bloom, affording a good supply of flowers, which are very useful for bouquets and for drying for winter use. *Gnaphalium rectum*, as it is seen in plantations in limestone districts, is a very interesting plant to the collector. There are others, too, of this family that ought to be more frequently met with, and are deserving of far more notice than they are at present receiving.

Gnaphalium Leontopodium carries off the palm. It is a splendid subject for the rockery, and the wonder to me is that it is so seldom met with in cultivation. Well-drained sandy loam with leaf-mould and limestone grit will afford it an element to develop itself in. It may be increased by division in the autumn, and when well established cannot fail to be admired.—VIRIDIAS.

“THE ROSE GARDEN.”

I HAVE just received this work, written by Mr. W. Paul. It should be in the hands of all devoted lovers of the Rose. The portraits are lovely and tempting. I fear, however, few of us could grow the Roses as lovely as they are represented. The

portraits are *Maréchal Niel* (frontispiece), confessedly the finest yellow Rose and the choicest. *Star of Waltham*, the best novelty I have seen for some time. It is globular and of most glowing colour. I have bloomed it. The *Crested Moss*, called also *Oriata*; the *Austrian Briar Rose*; *Firebrand*; *Louis Van Houtte*, a splendid Rose as portrayed, and also as grown here last year on Mr. Prince's seedling Briars; *Madame La Baronne de Rothschild*; *Peash Blossom*; *St. George*, beautiful as portrayed, and also as grown here last year. I shall be greatly mistaken if *Star of Waltham* and *St. George* do not prove to be great acquisitions and two of the very best of the latest Roses introduced. *Souvenir de la Malmaison*, the most valuable of all the light Roses; *Belle Lyonnaise*, most beautiful; *Catherine Mermet*, very beautiful; *Madame Levet*, choice; *Marie Van Houtte*, most beautiful; *Queen of Waltham*, very beautiful. It is here, but I have not yet bloomed it. Such, then, are the portraits. As regards the subject matter, it is that of a most experienced and first-rate rosarian. It is to be wished that persons seeking to direct the public would read this work and also wait for more matured experience.—W. F. RADCLIFFE, *Okeford Fitzpaine*.

APPLE YORKSHIRE ROBIN.

THE Apple "M. H." mentions on pp. 189 and 190 as *Yorkshire Robin* is very probably the same as is known in this neighbourhood as *Robin Knaggs*. The tree is a free grower and a profuse bearer; the fruit being of medium, or rather above medium, size, and coming into use in January or February. I have some in use now which have every appearance of being fit to keep for a couple of months longer. The flesh is very firm and juicy, with slight acidity and pleasant flavour, and is good either for dessert or cooking purposes. The variety is in my opinion a very valuable one, and well worth general cultivation. It appears to be well suited to strong soils generally.—W. W., *Statton-in-Cleveland*.

I AM glad "M. H." has been more successful with his *Hawthornden Apple* than is unfortunately the case in many localities. Undoubtedly, from the free growth made and the necessity for the application of the knife, his trees are upon *Crab* stocks; for upon the *Douain* stock, though it grows very freely for a time, soon arriving at a bearing state, it grows very little—next to nothing after a few years, canker ensuing. The trees I have on *Crab* stocks, though much cankered, grow strongly. I shall, from the hint had from "M. H.," prune hard, and have no doubt that with an amplitude of foliage the tendency to canker will be overcome.

"Robin," about which "M. H." inquires, is still a hale fellow, not likely to die out for many generations. Many of our local Apples are fast losing their local names, being absorbed in the proper names found for them by the author of the "Fruit Manual." "M. H." will find "Robin" accurately described at page 168 of the last edition of the "Fruit Manual," under the unpretentious title of "Winter Greening," of which the author remarks—"A culinary Apple of first-rate quality, which comes into use in November, and has been known to last under favourable circumstances for two years. The tree is very hardy, a free and good grower, and an abundant bearer"—what I have found it to be in every orchard in which I have seen it.

Other of our local Apples are fast losing their identity. *Copmanthorpe Crab*, for instance, is absorbed in its proper name of *Dutch Mignonne*; but what could have been the reason of the original name of "Coate's" being changed to its present one, though it has had both for over half a century, is past the comprehension of—YORKSHIRE GARDENING.

SEEDLING BRIARS AS ROSE STOCKS.

I REMEMBER when *Souvenir de la Malmaison* began to find its way among admirers of Roses that it was looked upon as a gem of the first water. At a flower show where it was exhibited an acquaintance of mine, after the show, begged the bloom in the stand, and to his surprise he discovered a bud on the stem. A stock being found the bud was carefully inserted, and in due time was found all right; introduced into heat it grew rapidly, and seedling Briars being prepared, when all was in readiness budding and grafting commenced, every eye being made available for both purposes, and he was soon rewarded by a good number of one of the noblest Roses of the day.

I have found by experience that seedling Briars make good

stocks for all purposes, and their roots are of the very best for root-grafting. It is of little consequence what mode of grafting is resorted to for root-grafting, many of the strong-growing Roses will afford us good stocks for this purpose, but we all have our fancies.

I find midwinter is a good time for the operation. One of the points to aim at is perfect union and exclusion of air, a gentle bottom heat with careful attention as to air and water, and then there is every chance of success. By this means a stock of Roses may soon be worked-up. There are no flowers that afford us more pleasure than a choice selection of Roses, and they are to be had the year round.—A LOVER OF ROSES.

CULTURE OF PERPETUAL-FLOWERING CARNATIONS.

HAVING been successful in growing these very useful plants I thought a few notes on their cultivation would be useful to your readers, as it is now a good time to commence with the propagation of the plants. I think the *Perpetual-flowering Carnations* are amongst the most beautiful class of plants we have for the conservatory, blooming as they do from October to May, and being so bright in colour and many of the varieties having such a delicate perfume that they are always admired.

I procure all the cuttings I can in the middle of March (and on to the end of April for succession), placing them round the edge of a 60-size pot in some light soil, covering the surface with silver sand, then place them in bottom heat (a hotbed and frame being the best place), where they will be well rooted in ten days or a fortnight. I then pot them off, five plants in a 5-inch pot, in three parts of sandy loam and one of well-decomposed cow dung. The plants are kept close till rooted, and are then placed in a cold frame. When the roots touch the edge of the pots I give them their final shift into 6 or 7-inch pots, placing some half-inch bones over the drainage with a little soot to keep out the worms, and place the plants in a light airy situation till the end of September, when it will be time to house them. I find green fly very troublesome, but a pinch of Scotch snuff dusted amongst them soon makes them disappear.

The sorts I grow are unnamed, being from seedlings; but I find *Empress of Germany* (white) and *Miss Jolliffe* (pink) very good sorts.—E. WILSON.

RINGWOOD HALL,

THE RESIDENCE OF JOHN JAMES BARROW, ESQ.

THIS beautiful modern mansion is situated on a gentle eminence, and commands many pleasant views of the surrounding country. It was built by the late G. Barrow, Esq., about fifty years ago. The gardens were laid out and the glass houses erected by Richard Barrow, Esq., chiefly under the superintendence of Mr. Peteh. Ringwood is in the parish of Staveley, and is three miles from Chesterfield and ten from Sheffield. The district of Staveley is more celebrated for its coal mines and iron works than horticulture. There are thirteen distinct beds of coal, the lowest being 1125 feet below the surface, with ironstone lying between each bed.

Richard Barrow, Esq., was succeeded by his brother James, who took but little interest in the garden department; but the present owner, J. J. Barrow, Esq., has done much, not only to improve and beautify the estate, but also to maintain the gardens in all their original splendour. The carriage entrance is from the Chesterfield road, between sloping banks of evergreens of diversified outline. The shrubs on these banks are not so luxuriant as could be wished, for the soil in which they are growing is composed in a great measure of the refuse from the pit banks.

The carriage front has a north aspect only three-quarters of a mile from the Staveley Works, but the volumes of flame continually vomited up by the blasting furnaces are judiciously concealed by dense belts of trees. The grounds fall by a gentle slope from the mansion, and are separated from the park by a sunken fence which conceals the point of junction where the pleasure grounds end and the park begins. The grounds in the immediate vicinity of the house are not cut up into flower beds, as is too frequently the case, but here and there are dotted fine specimens of evergreens. From the east side of the Hall we obtain views of the long range of hills reaching from Eekington to Bolsover. The ancient castle at the latter place is seen standing on the brow of a steep and lofty hill,

and is an object of great interest to the inhabitants of the surrounding country.

Adjoining the west side of the mansion is the small conservatory 70 feet long and 14 wide. It was all aglow with winter-flowering Begonias, Azaleas, Deutzias, and a countless host of other plants which usually flower at this period. Turning to the left and following a narrow walk we come to a large circular basin of water with a fountain in the centre. The next object that attracts the admiration of the visitor is the Rose arbour 100 feet long. The framework is made of strong iron and will stand the wear of many generations. In the summer season it must be a spot of unsurpassed beauty, for there are Roses of every shade and hue, and such as will please all lovers of the queen of flowers.

This arbour leads to the large conservatory (fig. 68), which may be considered one of the chief features of Ringwood. It

forms half of an octagon, and is 220 feet long. The centre is also octagonal, surmounted by a dome supported by eight pillars of the same form, and is of great external beauty. It is entered by a door at each end and two others in the centre. Under the dome is a large fountain of elaborate workmanship, and surrounded by foliage and flowering plants a scene is produced of a pleasing character. At each end there is a stage filled with such plants in bloom as *Imantophyllum miniatum*, *Eupatoriums*, *Heaths*, *Prunuses*, *Hyacinths*, and other spring-blooming plants. From the stages to the large fountain is a broad border 6 feet wide planted with *Camellias* and other permanent plants. A path formed of Derbyshire flagstones runs all round the conservatory 8 feet wide, and then a narrow border for climbers, &c. In the centre border I observed some *Camellias* 8 and 10 feet high and as much through. The bright glossy appearance of the foliage bore testimony to their

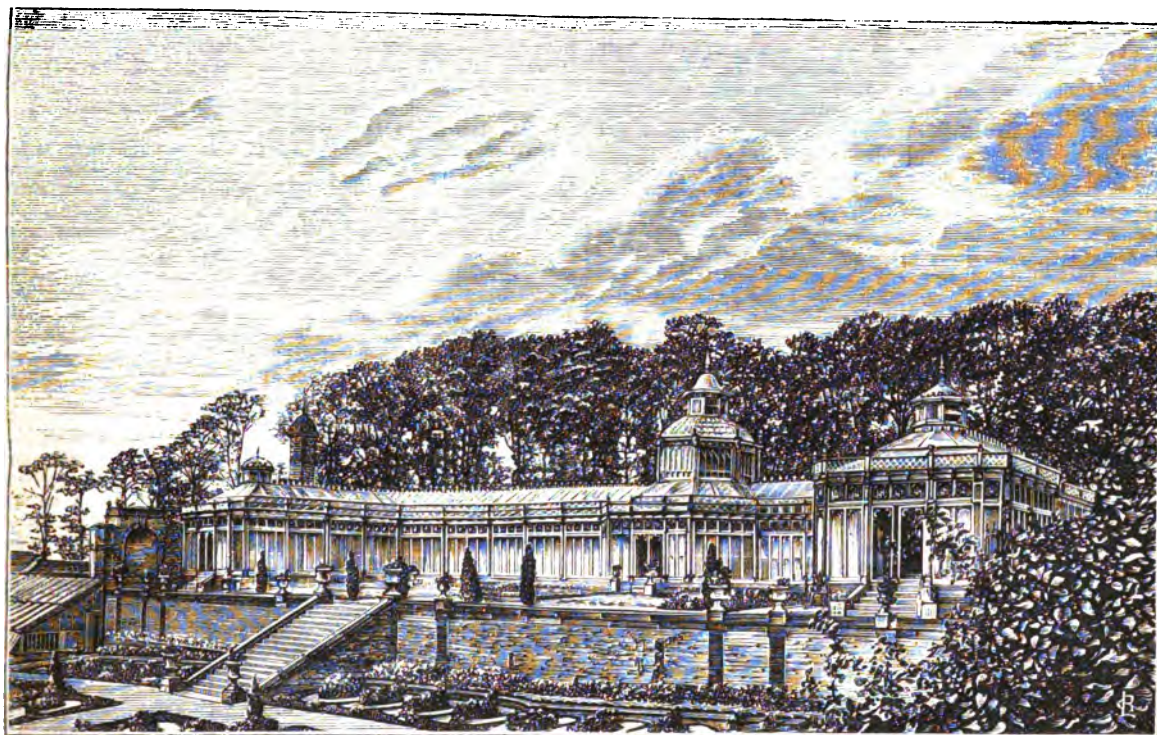


Fig. 68.—THE CONSERVATORY AT RINGWOOD HALL.

robust health, as also did the magnificent flowers with which the plants were laden.

I inquired of Mr. Prince, the head gardener, the cause of his success with these gigantic *Camellias*, when he informed me that the only stimulant employed was occasional doses of soot water. Before watering the borders they were strewn all over with a good coating of soot, which is washed down to the roots with the water. Among the *Camellias* I noticed *Queen of England*, *Imbricata*, *Chandleri elegans*, *Lady Hume's Blush*, *Princess of Prussia*, *Prince Albert*, and *Alba plena*. In vacant places interspersed with the *Camellias* are placed in pots such plants as *Myrtles*, *Cytisuses*, *Aloes*, *Yuccas*, and *Imantophyllums*.

There are several *Fuchsias* planted in the border the plants towering 10 or 12 feet high, and which considerably relieve the monotony of the *Camellias* during the summer season when the *Fuchsias* are bespangled with their long branches of pendant blooms. The narrow border is planted chiefly with *Lycopodium denticulatum*, which gives freshness and coolness to the long promenade. At intervals of 8 feet climbers are planted in the border, and trained up the trellis, and suspended from the rafters overhead. These comprise *Passifloras*, *Loniceras*, *Clematisses*, *Eccallonia macrantha*, *Fuchsias*, *Tacsonias*, and *Maréchal Niel* Rose.

The terrace in front of the conservatory is 182 feet in length. Many former flower beds have been turfed down, and only a

few beds for flowers remain. A fine pair of *Golden Yews* at the top of the steps leading to the flower garden arrest the attention of the visitor. Passing down these steps we come to the flower garden proper. I saw it in September before the autumn rains and cold nights had robbed it of its beauty; and the least compliment I can pay to Mr. Prince is, that the effect produced was excellent.

To the left of the flower garden is a small orchard of young *Apple* and *Pear* trees in excellent bearing condition. This is separated from the pleasure grounds by a thick belt of shrubs, which answer the twofold purpose of a dividing screen and affording shelter for the fruit trees from the easterly winds. Below this orchard is a small kitchen garden used expressly for early vegetables and salads. On turning to the right I noticed another belt of shrubs, which forms the boundary on the western side of the flower garden. At the bottom of this shrubbery on an elevated site is a large standard *Pear* tree, *Welbeck Bergamot*, which never fails to bear an immense crop of fruit. I mention this fact to show the importance of planting on ground as high as possible, where shelter is also afforded by other trees from boisterous winds.

Leaving the flower garden we arrive at a range of houses 75 feet long in three compartments. The first is a *Peach* house under the trees planted in the front and trained to a trellis under the glass, the kinds being *Royal George* and *Barrington Peaches*, and *Violette Hâtive Nectarine*. The trees

are in excellent condition, being well furnished with young bearing wood from the top to the bottom. The second house is a late vinery, the Vines consisting of Black Alicante, Lady Downe's, and Gros Guillaume. On the 19th of February, when I was there, the Grapes were as fresh and plump as if it had been the beginning of November. The third house is a late vinery with the fruit all gathered and the Vines pruned. The Vines in this house are principally Black Hamburgs, Muscats, and one of Black Alicante. It was from this last-named Vine that Mr. Meredith obtained eyes in the first instance to stock the vineries at Garston, and subsequently other places throughout the country.

Leaving this range, the next house to be inspected is the exotic fernery. Here there is much to interest, but approaching night permitted only a hasty glance. I noticed fine specimens of *Gymnogrammas*, *Dicksonias*, *Aspleniums*, *Adiantums*, *Blechnums*, *Gleichenias*, and *Lycopodiums* of many sorts. The back wall is covered with *Lycopodium denticulatum* and a few stray *Begonias* of the ornamental-foliage section. A large piece of galvanised wire netting the same size as the wall was fastened about 2 inches from the latter. Then the cavity between the netting and the wall was filled with moss and peat, the moss being kept next the netting to keep the peat in its place. The *Lycopodium* was fresh and green, and the *Begonias* dotted here and there had a beautiful effect.

In the frame ground are several ranges of pits each 60 feet long, used for Pines in the early stages of their growth, Cucumbers, Melons, plants for the conservatory, and thousands of bedding plants. In addition to the above ranges of pits there is a Peach case in three divisions, the first division being devoted to Cherries, the second to Victoria and Elrue Nectarines, and one Walburton Admirable Peach, and the third being occupied with one gigantic Royal George Peach.

In another enclosure near Mr. Prince's house is a block of useful span-roofed houses and pits. The houses are uniform in size, 45 feet long and 16 feet wide. The first is partly filled with ordinary greenhouse plants and a large stock of superior plants for the summer flower garden. The next is a plant stove containing some fine specimen *Orotons*, such as *O. angustifolium*, *O. interruptum*, *O. irregulare*, *O. Weissmanni*, and the old *O. variegatum*; *Aphelandra aurantiaca* Roezlii, *Xylophylla latifolia*, *Stephanotis floribunda*, a fine plant of *Adiantum farleyense*, large *Marantas*, *Bougainvilleas*, winter-blooming *Begonias*, and *Dracenas*. The next house is filled with Pines, some of them just pushing into fruit, and others for succession. The plants are remarkably healthy, and are distinguished for thick, sturdy, compact foliage, many of the leaves not being more than 2 feet long. The general appearance of the plants demonstrate that they have received skilful culture. Several ranges of pits are used for early Potatoes, Asparagus, French Beans, Radishes, and Salads.

We now cross the park to the kitchen-garden department. There is a range of seven houses built on a hillside, the ground falling at the rate of 1 foot in 10. Each house is 33 feet long, 16 feet wide, and 12 feet high. They are half-span-roofed and heated by hot water. Though there is a difference of rather more than 8 feet in the level of each house, the circulation of the water is perfectly satisfactory. The first is a Peach house with the trees planted in front and trained to trellises near the glass. The trees are in robust health, and give promise of an abundant crop of fruit. The second house is a vinery replanted last May with Vines struck from eyes by Mr. Prince in February. They had completely filled the house with wood and foliage before autumn, and are now cut down to within a few inches of the ground. The third house is planted with Muscat Vines, now pruned and ready for starting into fresh growth. The fourth is a Peach house. The fifth is a late vinery. The sixth also a vinery, and the last in the range is an orchard house devoted to Plums, Pears, and Figs. Some of the trees are in pots and others planted out. They had produced heavy crops of fruit, and from the vigorous appearance of the trees and the numerous fruit spurs and buds they gave great promise for the future. In the kitchen garden I observed some fine dwarf Apple and Pear trees, and a few standard Plums. Mr. Prince informed me that he saved his crop of Pears and Apples from being destroyed by the frost by tying bunches of hay among the branches. There are several fine beds of Strawberries, and judging from their luxuriant appearance Mr. Prince evidently understands their cultivation. Among Broccoliis Snow's White Winter was found to be invaluable.

I may add that Mr. Prince, the gardener, is thoroughly

practical and master of his profession. He received his early training at Lord Londesborough's at Grimston Park; he also served at Syon House under Mr. Smith, now of Kew, and at Chatsworth. As a garden, both extensive and complete, Ringwood is especially noteworthy, and in my hurried visit I have reluctantly passed over many features of interest with which the place abounds. Mr. Prince is about to leave Ringwood, but a gardener so competent is not likely to be long disengaged.—R.

CELERY AND ITS CULTURE.

THAT this is a very favourite vegetable and one which absorbs a considerable share of the gardener's attention is evident from the efforts which are made by vendors to "select," "improve," and offer "new" sorts having superior claims to public notice.

Celery is one of the most important of our staple garden crops—a crop for which there is no substitute, and one which must have a high system of culture bestowed on it to bring it to perfection. It matters not how small a garden may be, Celery must be there; while in large gardens it is grown almost by the acre, and in "market fields" many hundreds of acres are devoted to its culture.

Further than merely growing Celery for plain table use a healthy rivalry is manifested in perfecting heads of the most attractive appearance for exhibition purposes, and as feats of skill sustaining the cultural reputation of the grower. In some districts—notably in the vicinity of Sheffield and Manchester—the culture of Celery is almost a speciality, and the cultural ability of many amateur gardeners is measured by the manner in which they exhibit at the "Celery show." These exhibitions which are common in the neighbourhoods of manufacturing towns are remarkable for the gigantic and otherwise well-finished "sticks" which the growers produce. It is not unusual to find heads of Celery exhibited upwards of 4 feet in length and weighing from 10 to 12 lbs.

As an exercise in kitchen gardening and as a healthy mode of recreation of artisans and aspiring gardeners, high-class—that is, gigantic—Celery culture is not only permissible but recommendable. It calls into action good and useful qualities which are seldom brought out until a man is "put on his metal." Huge and perfect heads of Celery cannot be produced without a rich and highly prepared soil, assiduous and unremitting attention, and hard work. These are qualities which are indispensable to the success of every gardener; and if by an attempt to grow in a "fancy" manner this or any other vegetable these qualities can become fixed as a part of a man's nature, the lesson will prove simply invaluable in after-life. Celery-growing is first-rate educational work; for if a man can win a copper kettle at a great Celery show he is not likely to fail in the cultivation of other vegetables. The hardest race I ever ran and the toughest prize I ever won was in a Celery race near a large town, when I was "first with White and second with Red." I fought then for my craft and not for the prize as such, for the gardeners of the district, it was confidently predicted, would be "nowhere," while I was resolved if possible that they should be "somewhere." I had not taken lessons from my most worthy teacher without being impressed with a feeling to honour my calling, and so far as it lay in my power to make it respected and not despised. Shall I state how I won that coveted prize?

First as to soil. I knew that it must not only be rich but rich in that element that was necessary to sustain the crop. What that element is and where I was to obtain it was not very clear to me, so I went to work in a very primitive fashion in working out a problem of chemistry. I wished to place in the ground not only food for plants but food for Celery. What that food should consist of I took as guidance the previous year's crop, and resolved that what it had took out of the soil I would endeavour to restore. I simply therefore saved all my Celery trimmings and made them the basis of my rot heap and future store. The trimmings were treasured, and as they decayed they were covered with soil—a layer of trimmings and a layer of soil. The mixture was further saturated with the strong drainings of the dunghill, and so the compost was formed which won the prize. I have never grown such Celery since as by that mixture, and hence my reasons for believing that it was rich in Celery food.

Next as to sorts and preparing the plants. The Red was Manchester Red and the White Goodwin's White. The raising of the plants I knew to be an important matter, and that

the usual mode of sowing the seed thickly in seed pans, like raising so many *Lobellias*, would never do. I therefore made a hotbed of manure and leaves, knocked a frame together of four boards to support the lights, covered the bed with 6 inches of rich light soil, and on this bed I sowed the seeds thinly—that is, that the number of seeds which are usually distributed over the surface of a pan a foot in diameter were scattered over a surface of ten times that area. The seedlings came up an inch or two apart, and with the gentle heat below and the gentler heat above, and with light and air surrounding each plant, they were extraordinarily robust. I knew that when my seed was sown in March that at least one of my competitors had plants in pans ready for pricking out, but I was not disconcerted. I knew his plants must receive checks by being twice transplanted, whereas mine were sufficiently thin to grow unchecked during the time that his were “recovering” from removals.

During the first week in May a portion of the plants were transplanted in a bed of rich soil at the foot of a south wall, and in June they were planted in the trenches. Others were left thinly on the seed bed, and were removed from thence to the trenches without any intermediate transplanting. There was no difference in the size of these plants when they were planted, neither in the size or quality of the Celery when it was ready for use. It was not only superior to my neighbouring competitor who sowed his seed in pans in February and grew on his seedlings like so many tender flowers, but it was superior to my own “early row,” the seed of which I had sown under glass occupying much precious room in growing-on my young plants.

There is no better mode of raising Celery plants for any purpose than by sowing the seed very thinly on a gentle hotbed, so thinly that the seedlings should not be closer to each other than 2 inches; then do they come strongly, grow sturdily, and only one check is necessitated by transplanting. The hotbed on which the plants are raised comes in useful for ridge Cucumbers, and if a few seeds of these are sown in the bed as soon as the Celery is removed, Cucumbers or, what are perhaps more useful, Gherkins for pickling, will be freely produced in September. If also a few lumps of Mushroom spawn are sprinkled over the bed before placing on it the soil for raising the Celery, it is more than probable that the crop of Gherkins in September will be followed by a crop of Mushrooms in October and November. Thus what at the first glance may be considered an extravagant provision—a 3-foot-high hotbed of leaves and manure for raising Celery plants—is not extravagant at all, but is really an economical mode of growing three crops, any one of which is worth the trouble involved in preparation.

The trenches in which my prize Celery was grown were 18 inches wide and 2 feet deep, and made rich with the compost above mentioned. The plants were regularly watered, and when established—not before—a slight sprinkling of nitrate of soda was given once a week, and washed into the soil. As the plants attained strength soot and guano water was applied freely; indeed the soil was continually moist, and as the roots protruded through the surface they were covered with manure.

The plants were tied-up as they advanced in growth, and each was enveloped with brown paper. Celery collars were not then invented. The paper was applied in several folds, and six weeks before the show the earth was applied. The result was the largest, cleanest, and most solid Celery I ever produced, and the labour was not begrudged when the prize was won.

Yet I must rule that that mode of growing Celery for a gentleman's table is a wasteful mode—a waste of manure, ground, time, and labour. Before “sticks” of that character can be presented in the dining-room four-fifths of them must be trimmed away and be sent to the rubbish-heap. My table Celery is produced at fully twenty-five per cent. less cost, and the quality is unimpeachable. My paper is, however, too lengthy for further details, and I will only say that the kinds I find most satisfactory for everyday use, and not for exhibition, are Turner's Incomparable White and Hood's Dwarf Red. Sorts larger than these, and altogether good, are: Reds, Ivory's Nonsuch and Leicester Reds; Whites, Veitch's Solid White and Dixon's Mammoth. These are suitable for home use and exhibition. When large heads are especially coveted I recommend as Reds Wright's Grove Red and Manchester Red, and as Whites Wright's Grove White and Goodwin's White.

For any purpose I advise that the seed be sown very thinly on a slight hotbed. If this cannot be had then make a seed bed 6 inches deep of thoroughly decayed manure or leaf soil in a very sheltered place, sowing the seed thinly at the present

time, and protect with glass. This is much preferable to sowing thickly in pots and raising quickly in heat, which is productive, unless special care is exercised, of a large per-centage of “bolted” plants. I will return to the subject of Celery culture on a future occasion.—B. FISH'S PUPIL.

FRUIT-TREE COPINGS, &c.—No. 8.

I FIND that though copings are a great assistance in early summer to keep insect life in abatement by accelerating the quick growth of young wood, yet after a certain time (according to season) it will at once be made apparent by the condition of the trees that the copings must be considered a great disadvantage if they are fixtures. Perhaps this may not be the case in cold-lying situations; I should not have found it so at Maesgwynne in Carmarthenshire, still in four situations out of six portable copings will be found the best. It is possible—nay, probable, that in one season in a half dozen we may find it of advantage if the coping were to remain on all the year. This brings to my mind that I hope to see the day when we shall have a sliding coping, so that by a mere pull we can have it down or up as required.

But to pass on to the more immediate subject. I find after the foliage has grown to its full size or nearly so, and fruit is “out of danger,” that dry winds and a powerful sun are drawing from the supplying sources of the tree. There is a stream that cannot be well met. Insects are now busy setting to work, and the glass coping that in spring fostered a rapid growth to the deterioration of insects is now doing the reverse. Red spider takes possession of the tree. Those invigorating dews, that passing shower—at once life to the tree and death to the insects—are kept from their life-giving mission—by what? The coping. Can we draw a comparison between glass coping and glass houses? Really there is nothing in common between them. Why? The glass house keeps off dews and showers I admit; but we can moisten the beds, walks, &c., in a house, and the wind has little or no effect in carrying it away. Not so the borders under coping. Moreover in syringing the trees in a house we find the moisture to remain for a considerable time. Not so on the trees under coping. In fact, I cannot see the good of having the coping on all the summer.

My experience last summer somewhat differs from the opinion that glass is a non-conductor. Trees under glass coping here require a far greater supply of water than those without coping; still worse, I found red spider more troublesome than the year before, though one was an extra dry, the other an uncommonly wet year. Judging from this, one is brought to think that glass coping must extract moisture both from the foliage and of course from the soil. If I am right, this again points to portable coping as the proper thing. Have a coping of, say, 2 feet 6 inches wide over trees growing in a dry situation, and it is easy to predict a short life for them if they are not very carefully treated.

There is another most disastrous practice if not avoided which is likely to bring coping into disrepute—namely, by not allowing space for ventilation at the apex. It is astonishing the power of heat that accumulates under a 2-foot-6-inch glass coping under a bright sun, and if it has no escape will do irreparable damage by roasting the foliage and wood and increasing red spider. I find even with an aperture of 1½-inch with a fixed coping that it is difficult to keep down red spider for a foot or so on the top of the trees. I would not have less than 3-inch ventilators from one end to the other. The question will be asked, How are we to keep out the frost and rain if we give this ventilation? I presume that most, if not all, walls have a stone coping of from 8 to 4 inches at least. Under this, then, is the place for the glass to be placed, leaving the space required for ventilation. The dropping of water from off the stone coping must be carried away by its overlapping the glass for an inch or two.

We now want to provide against driving rains, wind, and frost. A perfect glass coping is yet desirable. At times we want all snug and close, at other times a good proportion of air playing on all parts of the tree is indispensable. I find the most economical and effectual way of placing the screen is by having a row of galvanised hooks screwed in the front of the coping at, say, 3 feet apart. I like good tiffany for the screen; it seems to keep out frost well, and is less cumbersome than many articles, and is soon dried after a wet night. I have it made up in long lengths and bound with strong wide tape to which is sewn brass or galvanised rings on one side to correspond with hooks in front of the coping. The other side of

the screen we sew on good strong cords just long enough to tie to a rail placed within an inch or two of the ground. A man can place this screen or remove it in a very short time with a rod similar to those used by a shopman to place his shading over the window. When this screen is once up and tied at the bottom nothing will move it. It is pleasant to walk along inside when very boisterous without, and find how snug all is. You can watch the unfolding of the flowers and swelling of the fruit. One can disbud sooner, and tend to the many other little matters, not leaving out the attention to hardening-off bedding stuff or earthing-up the few early Potatoes growing under the wall, all without exposing oneself to the outside wind, rain, &c. I find a narrow batten of wood a handy means of stopping-up the ventilating openings when required. If just a little tight it can be driven in easily, and removed quickly when not wanted.—JOHN TAYLOR, *Hardwicke Grange*.

KILLING RED SPIDER.

ONE of the best means of eradicating this pest, and one which I have successfully practised for many years, is by creating fumes of sulphur with the aid of heated furnace shovels. If the operation is performed with due care every spider will be killed, and not a leaf of either Vines or Cucumbers will be injured. If, however, the work is loosely or carelessly done injury will inevitably be committed. But of this there is no real danger, for a safety valve is always present, which if regarded will lead to satisfactory results. My mode is as follows:—

On the evening of a still day, and after the house containing the spider has been closed, I secure the aid of two assistants. One heats a shovel at the fire, and runs with it to the door of the vinery. Here is placed a careful man with a pot of sulphur, which he sprinkles very slightly on the shovel, and the sulphur at first burns with a flame. That is the danger signal. In a few moments, however, the shovel cools and the sulphur smoulders, showing no incandescence whatever—that is the safety valve. At that stage he hands it to me inside the house, and I sprinkle it freely, and continue to do so as long as fumes are emitted. In the meantime other shovels are being prepared outside. In a quarter of an hour I have a light blue atmosphere, and as soon as my eyes commence smarting I leave the house.

In the morning I have invariably found every red spider dead, and every leaf alive and uninjured. The slightest incandescence of the sulphur inside the house will cause injury to the foliage, but I have never found the slightest harm result if the precautions named have been duly carried out. It is a matter on which none need err, for it is easy to perceive when the sulphur does not show a flame outside, and as easy to know when one's eyes smart inside the house. I have practised the plan for more than twenty years, and always with the same result of killing the spider and not injuring the foliage of Vines, Cucumbers, or Melons.—G. W. Y.

[We insert this letter, knowing the writer to be an able and experienced gardener; but we think it right to urge that great care is needful in carrying out the plan which he details, and on no account should it be attempted by young and inexperienced men.—EDS.]

NOTES ON VILLA AND SUBURBAN GARDENING.

GREENHOUSE AND FRAMES.—The first-named structure will now be gay with many plants in flower, and as they come in let them have the most airy part of the house, guarding, however, against any sudden change of temperature. What I mean is that after a plant has been forced, even if it is only moderately, the change from heat to a cooler atmosphere will frequently cause the plant to flag, and the result is that many of the undeveloped flowers do not expand at all, so that the fickle weather of March must be watched and air given accordingly.

There is as much or more skill in completing the growth of a plant after it has flowered than there is in bringing it into flower. I allude to such plants as Asaleas, Camellias, Deutzias, Heaths, and such other plants as an amateur grows in a general way. Some, such as the above, make their growth after flowering, and therefore when out of bloom must have a genial atmosphere afforded them to complete that growth so necessary to the next year's flowering; while others which are herbaceous, such as *Dielytras*, *Richardias*, *Solomon's Seal*, and *Lily of the Valley*, and many more plants which make their growth at the time of flowering, must have just as much care taken of them as the first named, and not be thrown aside, as is frequently the case, to take care of themselves. Unless the bulb has proper time

and treatment to grow and mature itself it will not flower successfully next year. So far it has been too cold to do without a little fire heat at night, therefore the sort of plants I mention must be kept at the warmest part of the house and be syringed occasionally; but when fine warm weather sets in the plants may be transferred to the pits or frames, and kept growing by husbanding the sun heat and closing early in the afternoon.

In the matter of bedding plants they may be safely trusted in glass frames now—that is, if they are kept close until better weather sets in. When watering is done let it be in the mornings of fine days if possible, so that the plants may dry themselves before the evening.

Prepare a temporary place for the *Calceolarias* and other similar plants that have been stored in frames; meanwhile, if they are making too much growth, take the tops off, and in a short time they will break again into growth, when they can be planted out in the place above mentioned, and kept protected for a time by day and night, afterwards to be exposed if the weather proves warm and fine.

Propagate at every opportunity all classes of bedding plants, especially those of small or dwarf growth, such as *Alternantheras* and other slow-growing plants. These, after rooting, should be grown in heat; and even the old plants, in order to produce cuttings, may be potted and placed in a *Cucumber frame*; but they ought to grow rapidly and afford a large quantity of cuttings, which will root in a few days.

KITCHEN GARDEN.—Some important crops must be prepared for now. Successive sowings of Peas and Broad Beans must be made as soon as the preceding crops are above ground, and these also must be protected by ridges of earth and a few twigs placed at the windward side of the rows. Peas cannot be had in use too early, and the crop may be accelerated a week by a little assistance in the way of protection in the earliest stages of growth. Spinach may also be sown between the rows of Peas; or, if the ground is scarce, even between the rows of Raspberries. It is a healthy useful vegetable, coming into use quickly after being sown, and should be more frequently seen in amateurs' gardens. A pinch of *Snow's Winter White Broccoli* should be sown at once; it is indispensable in every garden. *Brussels Sprouts*, *Cottagers' Kale*, and *Savoy's* are equally serviceable, and seed should be sown without delay. The sowing of later crops of Broccoli may be deferred for a week or two. Sowings should also be made of *Cauliflowers*, *Lettuces*, *Radishes*, not forgetting also a row of *Parsley*. Potatoes should also be planted except in cold and heavy soils. The sets should be carefully prepared, and be assisted to make a stout sturdy growth before being placed in the ground. In light soils and dry situations plant early and deeply; but in soils of an opposite character it is preferable to prepare the sets and aid them to make a healthy growth above ground, and then plant rather shallow early in April. That applies to clayey ground and cold districts. A little Celery seed should be sown on a gentle hotbed or in pots of light soil. Do not sow any seeds unless the soil is in a free workable state.

FRUIT GARDEN.—The blossom buds are prominent and the weather inclement. Fruit trees on walls must be protected, or there is great danger of the crop of fruit being lost. Sacking, sheeting, netting, straw screens, evergreens, will all be useful aids in producing fruit if applied and also removed at the proper time. The protecting of fruit blossoms is a work of great importance, and the means for fruit-growing are incomplete unless protecting material is provided to shelter the trees against the piercing winds and nipping frosts of spring. Many trees of Apples and Pears produce terminal fruit buds at the extremities of the branches. These must be picked off at once, in order that a wood bud may be induced to break and continue the extension of the tree. Many young trees are greatly injured, if not ruined, by neglect in promptly removing terminal fruit buds.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

If the nailing of trees is not finished it ought to be done without delay. The Apricots are in flower on south and east walls, and the protecting material ought to be fixed and ready to place over the trees in an emergency. Anything sufficiently thick in texture will answer the purpose of protection, and it is cheapest in the end to obtain a good article. There is a cheap shading in the market made from jute, or a mixture of jute and flax. We have some shading now which is likely to last made entirely from flax. It costs 6d. a yard, and will be cheaper in the end than the mixture of jute and flax that could be bought 25 per cent. cheaper. There is one thing which should be mentioned, and that is that the best material is made generally but a yard wide, whereas if it could be bought as wide as the wall is high the expense of sewing would be avoided. Whether the wall is covered with protecting material or not, at all events there ought to be a projecting moveable coping which should extend about

a foot out from the wall. It may be of wood, slate, or glass; the former is easiest managed.

Many gardeners are obliged to crop their fruit-tree borders close to the wall. We have seen Cauliflower plants so reared, and various small salads for early use; and spring flowers, especially Violets of sorts, are brought in very early in such a position. It would be much better if the space at least 8 feet from the walls could be free from crops, so that so much of the ground could be covered with decayed manure.

Where the walls are much exposed to gales of wind the placing of evergreen branches amongst the trees as a shelter may be a very doubtful advantage. Some growers, especially the amateur class, are very fond of digging amongst the roots of their trees. If the tree does not bear they say, "Let us dig about it and dung it." Very often it would be better to let the ground alone, and for stone fruits especially. Should the soil be firm the mulching of manure will entice the roots to the surface, and will also prevent the ground from cracking.

The ground is very wet yet, and the Strawberry bed required weeding. A man went over the ground first and picked out all but the very smallest weeds, and on a drying day last week the Dutch hoe was run through between the rows. All ground under fruit trees will be stirred with the Dutch hoe when the ground is dry. Keeping the hoe at work early in the season is very advantageous to all the trees that are not mulched.

ORCHARD HOUSE.

Peach and Nectarine trees are now expanding their blossom buds on the trees in pots. The weather continues cold, but there has been sufficient sunshine to raise the temperature of the house by day, and the high winds are an advantage to the setting of the fruit. When the weather is dull and close it is necessary to gently shake the trees daily to distribute the pollen. The trees require water only about once a week as yet at the roots, and it is well to be careful not to spill any of it about the paths or borders of the house. Pear and Plum trees have been brought in from out of doors. The blossoms of the Pear trees were considerably advanced.

VINERIES.

There is nothing particular to note in this department. In the early houses the flowering period is over, and the fruit seems to have set very well. The Vines had been allowed to grow on unchecked until a few days before the flowering period, when all the laterals were stopped, and until all the bunches had flowered there was no more stopping or tying; either to bend down a lateral or stop its growth checks it to a certain extent, which is very undesirable when the fruit is setting. Some Grape-growers recommend the temperature to be a little lower at the time of flowering. Our houses are kept about 5° higher, and the setting of the fruit is aided by merely shaking the bunches gently. No doubt the high winds have been of some service in distributing the pollen. We have had continued gales from the west for the last ten days.

When all the fruit was set the borders had a good watering with manure water. The inside borders of the late vineries have also had a good watering with manure water. The Vines are breaking freely, and the houses are now kept close.

The more experience we have with keeping late Grapes so much the more are we convinced of the importance of ripening them early. Late-ripened Grapes are not sufficiently firm in the flesh to keep well until March or April.

We intend to inarch some of the Vines in the late houses this season, and preparation is made for it. The most complete union is made by uniting green wood to green. We allow the shoots to grow about 4 feet, then take a slice of each about 8 inches in length, with a sharp knife cutting clean and to the centre of the growths, bring them together, and tie firmly with soft matting. The growth on the stock should be pinched-back to a leaf above the union, and the new Vine will make a fine bearing shoot the first season if it is allowed space to develop itself.

Those who grow Vines in greenhouses or conservatories labour under disadvantageous circumstances, not only when the Vines are starting, but all through the season. Before the Vines start in spring it is necessary to shade the house for Camellias and other flowering plants, and in the summer it is necessary to shade the house and air it more than the Vines like. If New Holland and Cape hardwood plants can be removed out of the house from the end of May Camellias and some other plants require the same treatment as Vines—namely, a close and warm temperature with syringing twice daily. If a supply of flowering plants has to be kept up in the greenhouse during summer it is much better not to grow Vines.

PLANT STOVE AND ORCHID HOUSES.

Some of our plants still require repotting, and they will be attended to as soon as possible. If plants are in a healthy state, and the pots pretty well filled with roots, a liberal shift may be given to them. Others may be unhealthy from the compost becoming sour; it will therefore be quite as necessary to repot them, removing the sour compost and repotting in smaller pots. Nearly all the stove plants are now growing freely, and a higher

temperature is necessary—not less than 65° at night with an increase of from 5° by 15° by day. If the weather is dull it is not well to try to maintain a high temperature from artificial heat, but in bright sunshine, even with a shading on, 80° may be reached; and if the house is closed between two and three in the afternoon with this temperature much less artificial heat will be required.

Ixoras are breaking freely, and require a plentiful supply of water at the roots and to be freely syringed. The climbing plants are now starting into growth. Our object is to keep them free from insect pests, especially mealy bug. If this pest is in the house it will find its way on to Dipladenias, Stephanotis, Cissus discolor, and Hoya carnosa. The young growths of the above twine tightly round the wires, but they ought not to be allowed to do this, as the plants cannot be loosened down without cutting all such growths off.

Achimenes and Gloxinias are much admired by some, but we had not sufficient accommodation for them and had to discontinue their culture. To grow them well they should be grown in a position near the glass, and Achimenes are the better of a little bottom heat. The pots containing the tubers should now be watered, and when growth has commenced they should be repotted. The plants do well in turfy loam and fibrous peat with a little sand and decayed manure added, draining the pots well. No plant will continue in health if the pots are not well drained and the drainage kept free from loose soil. It is necessary that superfluous water should find egress freely and at once.

All free-growing stove plants require plenty of water, but it must not be applied when the plants do not require it. There is a much closer connection between the vegetable and animal kingdoms than most people are aware of. If any members of either are gorged with food when it is not required they will not remain long in health. An animal will not drink unless it is thirsty (some human beings have not so much sense), and a pot plant will suffer if it is frequently watered before the soil is sufficiently exhausted of moisture. Another point of resemblance is in the fact that cleanliness and fresh air is quite as necessary for one as the other. One is often asked by the inexperienced, "How often must I water my plants?" Now this all depends on circumstances—whether the atmosphere of the house is dry or moist, and whether the pots are full of active roots. Every cultivator must learn from experience. If cuttings are not yet put in of the usual softwooded stove plants for flowering in autumn, this ought to be done at once.

Many of the Orchids have been repotted, and others have been placed in fresh baskets or on blocks. Some it was thought better not to shift out of their pots or baskets; these have been surfaced with fresh compost. This is a good time to shift the large genus of Dendrobium. This ought to be done as soon as there are signs of growth. We have in flower at present the very beautiful *D. litiflorum*. This is a more elegant plant than *D. nobile*. It very much resembles *D. nobile* in the flowers, but the growths are more slender. This is a very free-flowering species that ought to be grown in every collection. There is some difficulty in obtaining good Orchid peat and sphagnum in some districts. Our experience with many Orchids is, that if clean crocks are used as a potting material this is often better than using either peat or sphagnum for Vandas, *Aërides*, and *Seccobolabium*. We have seen plants of the above turned out of the pots, and the only live roots were those that had been formed above the compost, all that had run into it being found either dead or dying.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

BIRMINGHAM (Spring Show). March 22nd and 23rd. Mr. G. Webley, Holm Wood, Westbury-upon-Trym, Hon. Sec.
GLASGOW. March 20th, May 10th, and September 12th and 13th. Mr. F. Glibb, Doughty, 167, Canning Street, Sec.
ROYAL CALLEDONIAN HORTICULTURAL SOCIETY. Shows April 5th, July 5th, and September 13th.
WESTMINSTER AQUARIUM. April 12th and 13th, May 10th and 11th, May 20th and 21st, July 5th and 6th.
CRYSTAL PALACE, Flower. May 19th and 20th. Rose, June 16th and 17th.
TIVERTON. May 24th and 25th. Messrs. A. Payne and J. Mills, Hon. Secs.
MANCHESTER (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.
SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fudge, 29, York Street, Sec.
SOUTH KESSEX (LUTTON?). June 18th. Mr. G. E. Cox, Wilmoat Road, Leyton, Sec.
COVENTRY. June 19th. Mr. T. Wilson, 8, Portland Terrace, Sec.
MAIDSTONE (ROSES). June 21st. Mr. G. Hubert Bensted, Rockstow, Maidstone, Sec.
SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.
KENTON (ROSES). June 23rd. Mr. T. W. Gray, Hon. Sec.
ENGLAND (ROSES). June 24th. Mr. J. Payne, Treasurer.
LEEDS. June 25th, 26th, and 27th. Mr. James Birbeck, Delph Lane, Woodhouse, Leeds, Sec.
RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.
FARMER (ROSES). June 29th. Mr. A. E. Baily Hon. Sec.

SOUTHERPORT. July 5th, 6th, 7th, and 8th. Mr. E. Martin, Sec.
HELENBURGH (Boscs). July 13th and 18th. Mr. J. Mitche'll, Sec.
WIMBORNE. July 12th and 13th. Mr. P. Appleby, & Linden Cottages
 Hon. Sec.
KILMARNOCK. Boses, July 18th and 19th. General Exhibition, September
 14th. Mr. M. Smith, 11, King Street, Hon. Sec.
TOWERBRIDGE. July 14th. Mr. W. Blair, Hon. Sec.
BRIGHTON. July 20th. Messrs. C. Jessop & E. Bawnley, Hon. Secs.
BRIMFORTH (Horticultural). August 2nd. Mr. E. H. Feltow, Hon. Sec.
CLAY CROSS. August 15th. Mr. J. Stallard, Clay Cross, near Chesterfield, Sec.
WESTON-SUPER-MARE. August 15th and 16th. Mr. W. B. Frampton, Hon. Sec.
PRIBSTON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.
SHERWESBURY. August 16th and 17th. Adnits & Naunton, Hon. Secs.
TAUNTON DRAME. August 17th. Mr. F. H. Woodford, M.D., and Mr.
 Clement Smith, Hon. Secs.
SHATON BURN. August 26th. Mr. R. Richardson and Mr. W. Elliott, Secs.
DUNDEE (International). September 7th, 8th, and 9th. Mr. W. E. McKelvie,
 26, Euclid Crescent, Sec.

TRADE CATALOGUES RECEIVED.

James Carter & Co., 237, High Holborn, London.—*Illustrated List of Prize Farm Seeds.*
 Ewing & Co., the Royal Nurseries, Eaton, Norwich.—*List of New Roses, Clematises, &c.*
 James Dickson & Sons, 108, Eastgate Street, Chester.—*Catalogue of Farm Seeds.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

TAX FOR GARDENER (St. George).—We believe you are liable to pay for him. The term "male servant" is comprehensive, even if the Act does not specify a gardener, but we dare say it does.

HOURS OF WORK (Puzzled).—The time usually required of workmen in gardens is from 6 A.M. to 5.30 P.M., but the hours are generally governed by the custom of localities. A gardener if competent and having an interest in his charge, should be allowed reasonable latitude. Such a man will not be afraid of working earlier and later than the hours named if his duties require it, and he should not be bound by a system of clockwork. If it is necessary to fix a stated time for working, that above named is reasonable.

LABOUR REQUIRED FOR GARDEN (W. W.).—Much depends on the size of your seven houses and two pits. If large and to be well managed they will afford sufficient occupation for one man. These houses, an acre of pleasure grounds, and three-quarters of an acre of kitchen garden, should be well kept by two men with the assistance of a stout boy in summer.

PLAN OF GARDEN (Mrs. E.).—We could not undertake to have a plan sketched for an old-fashioned house of the situation of which we know nothing. As the house is four centuries old, geometrical beds in front would be appropriate. They should be of forms corresponding with the architectural lines of the building and be surrounded with Box-edging.

TENANT REMOVING TREES OR SHRUBS (E. Aspinall).—No tenant has a right to remove a tree or shrub whether he or anyone else planted it, whilst he is in possession. After he has left he has no right even to go into the garden.

PRUNED PEAR TREES NOT BEARING (E. F. W.).—The trees planted six years ago ought to be fairly furnished with fruitful spurs. We can only account for their not being so from their growing too vigorously, from intemperance to summer pruning, and by not lifting them occasionally. Probably the trees have been too much "mulched"—the soil too rich. We had about a hundred trees in a similar state to what you describe yours to be, which we lifted in the autumn of 1874. They are now very full of bloom buds, and, if the season be favourable, will no doubt bear abundantly. Pay close attention this season to summer-pruning, and lift the trees in autumn so soon as the leaves fall. We presume the trees are on the Quince stock, and if so they ought to thrive in a low situation.

BROCCOLI FOR SUCCESSION (Idem).—It depends upon the kinds and time of sowing and planting; certainly is not due to situation, for in a much higher and colder one two hundred miles further north heads have been out during the past three weeks. We sow Snow's Winter White (which is the kind we are now cutting), Beakhouse's Winter White, which succeeds it, Veitch's Spring White, Cooling's Matchless, Perkins' Leamington, Lander's Goshan, and Sutton's Perfection, and have Broccoli in succession from February to June. With Veitch's Self-protecting Autumn Broccoli we calculate upon having Broccoli from November.

PLUMBERIA CAPREATA NOT FLOWERING (Idem).—It is probably in a too dark and shaded position, or may have too much root space. Allow it to grow, watering moderately so as to induce harder closer-jointed wood, confining pruning to the shortening of very strong long growths and the removal of gross irregularities, exposing it to as much to light as practicable.

CULTURE OF DINA GRANDIFLORA (Mrs. D.).—Grow in an airy greenhouse protected from the direct rays of the sun, but otherwise light. Put in sandy fibrous peat, with about a sixth part of pieces of charcoal intermixed. Drain the pot one-third its depth, and place an inverted saucer in a pan of water kept full, the inverted one on which the pot is stood being covered with water about an inch, so that the pot containing the plant will have that depth of water. When not growing this moisture will be sufficient, but when in growth water overhead with a rose watering pot every morning.

PRIMULA, CINERARIA, AND CALCEOLARIA SEED-SOWING (E. W. R.).—Sow the Primula and the Cineraria seed the first week in May, and the Calceolaria seed the first week in July in a cold frame; the Primula and Cineraria to be placed in a gentle heat, and when the plants have a pair of rough leaves pot-off singly and place in a cold frame, growing therein during summer, shifting into larger pots as required, removing to the greenhouse in October, from which frost must be excluded.

BUTCHER'S BROOM BERRYING (J. H. M.).—It is a hardy shrub, requiring only to be grown in light moderately rich soil and an open situation. It will already have been or be in flower, the berries being borne on the margin of the leaves. The flowers may be impregnated with a camel's-hair brush to ensure their setting.

CULTURE OF DOUBLE GERANIUMS (Inquirer).—Cut them back now, and repeat when they have made fresh shoots about an inch long, removing most of the old soil, repotting in the same size of pots as before used, in a compost of turfy loam with a fourth of old cow dung or well-decayed manure, and a sixth of sand. Peg or tie-down the shoots, training them thinly as they advance, potting into the blooming pots about the middle of June, up to which time the plants may be stopped. Grow after May in a cold pit with abundant ventilation, and afford liquid manure at every alternate watering after the pots are filled with roots, only attending to the regulation of the shoots by tying out. It is useless your competing if you will not use stakes, for others will do so, and have very much better shaped and larger plants. The main thing is to show those aids as little as possible, and to keep the plants well furnished at the base, compact and well flowered. Tricolor and Bicolor Geraniums are judged by their foliage—its brightness and depth of colouring, and those which have the finest foliage with size and symmetry of plant will be winners. We do not know what may be termed the proper mode of training. Some employ wires, others stakes, one being as artificial as the other. Plants in a half-globe form, well furnished from the base and compact in growth, combining freshness with high colouring and distinctness, are to be aimed at. Sticks and wires ought to be quite hidden from view.

HEATING FRERNERY—ORCHIDS AND FERNS (C. A.).—Your house ought to have piping added so as to raise the temperature in February and March 10° higher than at present. We should have Ferns at the molder side or part, and Orchids at the drier. You do not say how many plants you will have accommodation for, but we name a dozen of each—viz., *Ferns*: *Adiantum gracillimum*, *farleyense*, and *concinnum latum*, *Asplenium gracillimum*, *Chelanthus Borigniana*, *Davallia tenuifolia striata*, *Dryasida quercifolia*, *Nephrolepis davallifolia*, *Platyterium aristatum major*, *Polypodium appendiculatum*, *Pteris tricolor*, *Notholaena trichomanes*, and *Platyloma trachypteris*. *Orchids*: *Mastodonta Harryana*, *Cattleya Mossii*, *Dendrobium Bessoni*, *Lelia purpurea*, *Dendrobium Farshii*, *Epidendrum macrochilum*, *E. viscalinum*, *Odontoglossum Alexandræ*, *O. grande*, *Dendrobium striatum*, *D. oculatum*, *Cattleya crispata superba*, and *Gypripedium canaliculatum*. In the sunless pit we should have *Hymenophyllum* and *Trichomanes*, and it need not be heated, being open to the house from which it will derive sufficient warmth. Perhaps we have misunderstood your letter; the sunless pit may only be another term for the north house you wish for Ferns and Orchids, and which will not accommodate more than the plants we have named. Flues repans will cover the walls perfectly. *Nepenthes* and *Anthurium Scherzerianum* would do well in such a house, but Palms and Begonias would be better in the stove.

STOVE CLIMBER FOR ROOF (Idem).—The best four may be *Cissampelos Balfourii*, *Stephanotis floribunda*, *Passiflora princeps*, and *Ipomoea Hecastella*. The best remedy for green aphids infesting *Adiantum* is fumigation with tobacco, taking care not to overdo it, or the young fronds will be injured.

STOPPING LAFAGEA BONA (M. R. H.).—Allow it to grow at its "own sweet will," not stopping it, but give it plenty of space, and it will reward you accordingly with abundance of bloom. We advise you neither to stop nor cut away other than worn-out shoots. It will not bear stopping, and to cut away the young shoots is to destroy the future flowering.

BUDDING MARSHAL NIEL ROSE (F. W. H.).—It will succeed on the Briar, but requires to be grown in a warm sheltered situation, or will do no good as a standard. We have no experience of it worked with a Perpetual, but it would no doubt succeed, the Perpetual being a free grower.

SHIFTING AND PROPAGATING CARRIAGES (Idem).—Shift the plants into the 10 or 11-inch blooming pots the second week in April. Take pipings, which are what we presume you mean by cuttings, at the close of June or the early part of July, a slight heeling being necessary. Layering is a more certain mode of propagation, it being performed at the close of July or early August.

WHITE SEEDLING CINERARIA (A. F. G.).—It is a fine flower for border purposes, but does not satisfy the requirements of a florist for exhibition.

GRAFTING PEAR TREES (F. J.).—You must not allow any growth from the stocks, and if the lower branches are near the ground and it is not desirable to cut them close off to the tree, you must graft them; insert grafts also on to the main stem when it is cut down.

TREATMENT OF YOUNG PEAR TREES (W. E.).—As they are recently planted cut the young growths back to half their length.

GRAFTING APPLE TREES (Idem).—You may insert the grafts as soon as the stock shows signs of growth. The grafts should be taken from the trees before they start into growth. They may be laid into the ground until it is time to use them.

PROPAGATING THORN (Idem).—We do not know the name of the Thorn that flowers at night. All the varieties of Thorn are propagated by grafting on the common White Thorn. Now is the time to graft them.

SOWING FUCHIA SEED (P. T. R.).—Sow the seed at once in pots or pans well drained, in a compost of two parts turfy loam, one part leaf soil, and a free admixture of sand. Scatter the seeds evenly, and cover them about an eighth of an inch deep with fine soil. The seeds we presume were separated from the pulp of the pods when gathered, if not the seeds must at sowing be removed from the pods. Place in a hotbed and keep moist, shifting the seedlings into single pots when they can be well handled, and when established in the small pots remove to a greenhouse.

SOWING ANEMONE SEED (Idem).—Sow at the end of July or early in August, in light rich soil in a sunny position, covering half an inch deep.

GROWING VINES IN STOVE PIT (S. M. L.).—The pit is in the first place too small for Vines to grow in permanently, and the house being a stove the Vines will not have the required rest in winter, nor due air for the thorough ripening of the wood. Pot Vines would be most likely to succeed, but you will only be able to fruit them one year, and either raise or purchase fresh canes for succeeding seasons. Particulars for raising the Vines are given by Mr. Douglas in last week's Journal, page 199. With Vines in pots you ought to have no difficulty. The pit could be filled with fermenting materials—a mixture of leaves and stable manure—so as to raise a gentle bottom heat, which will assist the Vines rooting and breaking freely, and the roots permeating the fermenting materials would tend materially to the success of the crop. The pots ought not to be plunged in a higher bottom heat than 75°.

IMPROVING A LAWN (A. B. C.).—Clear away as much of the moss as possible by scratching with an iron rake, and dress immediately with a rich compost containing a sixth of lime, applying half an inch thick. Rake thoroughly about the middle of April, and sow 8 lbs. of *Festuca duriensis*, 12 lbs. of *Cynosurus cristatus*, 8 lbs. of *Festuca tenuifolia*, 4 lbs. of *Poa nemoralis sempervirens*, 4 lbs. of *Trifolium repens*, and 8 lbs. of *Trifolium minus*, in mixture for one acre, rolling well after sowing. If the surface is very rough and uneven have the ground well dug and made level before sowing the seeds.

SUMMER GARDEN FLOWERS (Idem).—By sowing hardy and half-hardy annuals you may have a good display of bloom in your borders from June to autumn, but Asters and Stocks will not alone give it. A few hardy annuals are—*Alyssum maritimum*, *Bartonia aurea*, *Calandrinia grandiflora*, *Chrysanthemum carinatum*, *Dunnettii*, and *Double Golden*, *Erysimum Peroffskianum*, *Leptosiphon densiflorus* and *albus*, *Nasturtium King of Tom Thumbs* scarlet, ditto golden, *Saponaria calabrica* and *alba*. Half-hardy—Asters, Stocks, *Phlox Drummondii*, dwarf *Scabious*, *Petunias*, *Ageratum Imperial Dwarf*, and *Senecio elegans*.

MANURING VEGETABLES (Idem).—Top-dress with any solid manure you can command, and water abundantly during growth with liquid manure. House sewage for the *Seakale* and *Asparagus*, and other crops, diluted with six times its volume of water, or guano 1 lb. to twenty gallons of water will be beneficial.

DORANTHERS PALMERI AND D. EXCELSA (A. W.).—We quote the following from Mr. Bull's catalogue:—"This is described by Mr. Hill, who is well versed in plants, as one of the finest productions of the colony of Queensland. It is found in one small patch on the mountains of that region, and about two hundred miles distant from the nearest township. In its habit of growth it is described as resembling the commoner *D. excoela*, but the ends of the leaves are less pointed, and the thimble-shaped cup is more distinct. The plants have a stout bulbous base, clothed with the remains of the imbricated leaves. These are elongate, narrow lanceolate, 8 to 4 inches wide, quite smooth, narrowed downwards into a channelled marginate stalk-like portion, which widens below so as to clasp the bulb, and tapers upwards into a long narrow point. The flowers form a pyramidal spike 12 to 18 inches high and 10 to 12 inches broad, the flowers being red, with the centre lighter, almost white. It is a beautiful species, and is described by those who have seen it in its native home as being greatly superior in beauty to the older and more familiar species." *D. excoela* is familiarly known as the Giant Lily of Australia. The plant does not flower until it attains a large size, when it then throws up a tall spike surmounted with an umbel of crimson trumpet-shaped flowers. It grows freely in sandy loam and peat. A conservatory is the most proper place for it, as the flower stem grows to a great height before the flowers expand. It is figured in the "Botanical Magazine" for 1814.

NAMES OF FRUITS (W. E. A.).—Isle of Wight Pippin.

POULTRY, BEE, AND PIGEON CHRONICLE.

TELEGRAMS.

THIS may seem a subject on which nothing can be said; but we really cannot let the matter pass unnoticed, for in these days of cheap telegraphy messages are sent broadcast all over the land. Poultry people are of course not exempt, and if a bargain happens to be advertised through any medium, and the post cannot conduct the order sufficiently quickly, a telegram is dispatched. This is all very well when the portage is paid or when the receiver comes within the radius of a free delivery; but this is hardly ever taken into consideration, and the message is often duly dispatched when perhaps on its arrival 2s. or more has to be paid for portage. But it is not to be supposed that Mr. Smith only has seen the bargain in the advertisement and thinks of a telegram, but Mr. Brown, Mr. Jones, and others have also noticed it, and they also "wire." But unfortunately the numerous would-be purchasers will not agree to the decision of King Solomon and divide the bargain; but only one can have it, and the unfortunate vendor is several shillings out of pocket from the other parties' messages.

Not only are these telegrams sent right and left for advertised articles, but when a good bird makes his *début* at a show perhaps several want to be possessed of it, and off goes a telegram to the owner, who no more wants to sell it than he does his own shadow. But still he has very likely to pay the portage of these unsolicited telegrams. And many more such cases there are. Perhaps a sold bird is due at its new home on a Wednesday night. It is delayed at some junction, and does not turn up till Thursday morning; but in the interval a telegram, or perhaps two, have been sent off, and a heavy portage has had to be unnecessarily paid, for it is a well-known fact that many of our greatest breeders and exhibitors live in the country far from a delivery office. We will give an instance or two of such cases. We had to telegraph to a distant county the other day, and not knowing the distance from the office we left half a sovereign on deposit for the same, and were horrified to find our change when next we called was 2s. out of the 10s. Now if that good party had received half a dozen such messages in reply to an advertisement or any such thing he would have had to pay 8s. on a message, for somehow those little items are never or rarely repaid. Again: a friend of ours last year advertised a pair of prize Bantams for £8 8s., but by a slip of the compositor the £8 was omitted, and only 8s. appeared as the price of the birds. Within twenty-four hours from when the advertisement appeared no less than nine telegrams were handed in, and 2s. to pay on each. The next day brought letters from all parts of the kingdom, enclosing post-office orders and stamps. Everyone

was clamorous for the birds, but when the announcement appeared again corrected in the next week no one bought them; and apart from the trouble the owner was actually 18s. out of pocket by the telegrams. And so we could go on with many such recollections, for we have always been located in the country; and though our messages only cost 1s. each for delivery, still those shillings unnecessarily expended would, as a friend said the other day, go some way towards paying the annual corn bill. Of course no one is compelled to take in these messages, and can decline to do so, for in fact we know of some who always make a point of so doing; but then there is so much risk in doing so, for the message may be to tell of some dear one's illness, or maybe only to ask if we have any "prize Cocks for sale now laying and fit for exhibition in good company at 8s. 6d. each;" for these latter words were actually used in a telegram to our knowledge.

Now, apart from trouble and inconvenience, these little sums soon make up a large one, and it is unwarrantable to make people pay them; and so the moral is that telegrams should not be sent so much at random unless it is known that where they are going to they will come under free delivery, or else a deposit should be left at the office for delivery charges, when, as soon as it is ascertained what they amount to, the balance can be returned. Of course with people that are known to each other this need not be done, for the one would know that the other would refund the portage money; but in those cases where there is no previous knowledge more care should be really taken in this matter.

This may seem a long story on an unimportant matter, but the evil seems to be a growing one, and we have been asked by two or three who have been martyrs only in the last month to give the subject notice. We feel sure that most persons will agree that it is something which can be and should be remedied, for a little trouble and care would stop all this inconvenience and expense.—W.

MR. GREVILLE HODSON THE POULTRY JUDGE AT HOME.

I HAVE sometimes wondered as to what becomes of poultry judges when they are not judging. Are they packed up with the pens and labelled, "Not wanted till next show?" or, like little "Alice in Wonderland," do they become smaller and smaller and are then placed inside a pen? And when next show day comes round do they, like the aforesaid little Alice, lengthen out telescope fashion and become big again? Anyhow they always look very much the same. There is my friend Mr. Teebay, who looked at the last Crystal Palace Show just as he always had done—just as if he had never undressed since he judged ten years ago. There is worthy Mr. Hewitt, who is almost equally unaltered, may he long remain so; and "our" Mr. Baily, who, splendid type of English manhood, looks large and fine as ever. Then, yes, there is also my aristocratic and cheery friend Mr. Hodson, who looks just the same as ever—as fresh as a windy morn. Can there be some hygienic and health-giving power in poultry-judging? Does the bracing air of the country come in the feathers of the birds? Well, I know not. Still, these poultry judges do keep up a most enviable sameness of appearance. What powerful beings they are too—what lords of the ascendant! There are barriers none dare cross save and except the judges; afterwards crowds may jostle, but while they are judging they have the space all to themselves. They cause exhibitors' hearts to quake and quail, to bound with joy or sink in despair. No wonder monarchs with such unlimited powers look so well and carry themselves so bravely year after year. But again I ask, What becomes of the poultry judges when not judging? What and where are these monarchs when not on their throne? What are they at home?

Now I had visited and seen the home of many a poultry and Pigeon fancier—had strolled in the garden of many a rosarian, but I had never seen a poultry judge at home. Having met Mr. Hodson many years at various shows, and "chummed up," as naturally we should, he invited me to go and see him at his home in Somersetshire. He lives in an historic country not far from where the last battle on English ground was fought, and between the towns of Bridgwater and Taunton, the latter place having one sad historic reminiscence, that of the bloody assaies of Judge Jeffries after the afore-alluded-to battle of Sedgemoor; but Taunton bears on its face no scars of the past, for it is one of the brightest and most cheerful of English country towns; but the Sedgemoor country, redeemed in olden times from the sea, is naturally low-lying and unpicturesque. I knew that Mr. Hodson was a great breeder of Sebright Bantams, the especial Bantams of our small-fowl-loving fathers and grandfathers, and that he had come to the front of late years with some splendid Blue Dragons. I was sure, then, for all reasons that I should have a pleasant and enjoyable visit when on a brilliant September day I stepped into the railway for Bridgwater. It will be a long time, in spite of school boards and railways, before Somersetshire folk—that is, genuine out-lying Somersetshire folk, lose

their strong local accent and peculiarities. Their county is far away from the heart of England—on a spur, so to speak, of the island. No streams of people from various parts of England and Scotland, as in the midland shires, are constantly passing through it to the metropolis. No drawing Scotch or "burring" Cumberland, or, strangest of all, no Lancashire dialect is heard by "Zomerset folk." Other habits from other parts are not brought to them, for the Cornish miners remain at home, so do the Devonians, and Somerset men are home-keepers as well. It was only in a time of national need, such as that of the armada, that Macaulay could have written of them—

"The fisher left his skiff to rock on Tamar's glittering waves,
The rugged miners poured to war from Mendip's sunless caves."

Hence, I think, lies one great attraction of the western counties. In natural beauties they are unsurpassed, and they remain strong in the local peculiarities which have descended from their ancestors. Somersetshire might take as her motto, "Always the same."

Thinking these thoughts, calling upon memory and former reading, and trying to realise the times of James and poor Monmouth and William of Orange, when Somersetshire saw great sights, I reach Bridgewater, and a short drive past a most picturesque church tower, that of North Petherton, and the quick-paced horses bring me to Mr. Hodson's door, which I reached by a pleasantly circuitous drive, so much better than a straight one. What a bright sunny house! and what a capital croquet lawn! were my first thoughts. Luncheon over—for even poultry judges and poultry-show critics must eat—and I proceed with Mr. Hodson to inspect his birds. A nice home and plenty of land, lots of roomy old buildings, good west-country orchard, telling of cider in plenty in parlour and kitchen; apple trees, and such crops of apples! and such healthy faces! enough to fill "our Doctor" with delight; more buildings and a couple of park-like fields. Verily, brother Hodson, thou hast a charming home for one like thyself, able to enjoy the country and appreciate aright horse, and dog, and fowl, and Pigeon. But I am proceeding too rapidly. Imagine house and gardens, and orchard and fields lying on a gentle, very gentle slope, and beyond, in view from the higher parts, a regular Somersetshire valley; while far off, very far off, comes in a bit of a range of Somersetshire hills.

Now, good reader, we will trot back in thought to the house and its sunny front. Walking away garden-wise first is a little aviary where Canary and English Finches, and Java Sparrows, Love Birds, and White Doves dwell at ease and in enjoyment; capital young ladies' pets, and here the pets of young ladies. Crossing to the stable yard at one's feet run a number of Silver Sebright Bantams. Mr. Hodson has, I believe, been a lifelong breeder of Sebrights, and has been very successful with them; and many have gone from his yards straight to the prize pen. He has the clear white Silvers which have in some recent instances come to the front. At the same time I believe I am correct in stating that Mr. Hodson believes that the original Silver birds of Sir John Sebright were not clear white silver, but creamy. This agrees with my belief; for I remember, nearly forty years ago, creamy Silvers, and not white Silvers, and Gold and Silver coming in the same brood. I do not mention this to disparage the new clear Silvers, but only to speak of the creamy birds being the original as a fact in poultry lore; and all facts, especially in poultry lineage, are valuable. I rejoice much at the greater number of Sebrights now bred and shown; for with no wish to offend the lovers of other Bantams—Black, White, Game, &c.—certainly the Sebrights must hold the first place. Then there is none of that horrid dubbing among these Bantams; and they are perhaps the most beautiful as to feather of all poultry. I may notice in passing that Mr. Hodson grows a great quantity of Jerusalem Artichokes, and in these his Bantam chicks run in the hot weather.

Leaving a walled and apparently productive fruit and vegetable garden to the left I proceed onwards to the Bantam houses proper, passing that regular "Zomerset" orchard. The Bantam houses are old buildings adapted to a new purpose. Here let me note that there is many a country house far away from London which has long straggling premises, and many old offices, sheds, &c. Now these with a little alteration, and good taste and knowledge of the subject, may with very little expense be made to suit a poultry amateur. No need of new poultry houses badly built and costly, as now masons and carpenters make them in these days of high pay and hasty workmanship. Here I found an old building turned into six poultry pens—cheap divisions inside—wire netting outside for the separate runs. A part of the back is made as a passage running the whole length, from which passage the birds can be seen inside their pens without the necessity of entering the pens, and the presence of a stranger frightening and scaring wildly the inhabitants.

First pen, Gold Sebrights, some very good birds. Second, also Gold Sebrights. Third, Indian Game Bantams quite of the Malay type, some Dark and some Light. These birds might be called miniature Malays or Malay-Bantams. Fourth, Gold Sebrights. Fifth, Mauritius Sechelle Bantams, to me a new

variety. Sixth, round the corner, a promising lot of Silver Sebrights. The size of these Bantam houses inside is 5 feet by 7, with an unlimited supply of mould for flooring. Oh, the advantage of having plenty of land! The runs are 15 feet by 7. These lovely Bantams are worth walking many miles to inspect, and what perfect pets Sebrights make with their sprightly demeanour, neat form, shapely blue legs, and—their lovely feathering!

Now, coming out of a sort of second kitchen garden in which these Bantams dwell, many running loose there as well as in the pens, I go along by that orchard red with cider apples, straight from pigmies to giants; for what do I find in the orchard?—huge Rouen Ducks paddling along with care and caution, as even their big feet must turn aside from the large apples. Aylesburys large too; but oh, their bills! Then I come within a yard, a "barton" we should call it in Wilt, with pavement sloping down to a stream of running water; and on the south side more old buildings, once bullock pens, converted into three pens for large fowls, with passage at the back as in the Bantam houses, and a window in each, so that the poultry boy may be watched if necessary, for how idle all young boys are! I often wonder how it happens there are so many industrious men. Why? Well, "happy thought" boys are taken to work at an age when naturally they love play, and men have wives and families to work for. Mr. Hodson keeps in this yard and these pens Cochins, Dorkings, and Black Polish—the oldest, and truest, and handsomest of the Polish varieties. I notice the pens are thoroughly well whitewashed and frequently, their size 11 feet by 8, the runs 89 feet by 19. The Cochin pullets, some of them prizetakers since I saw them, have a walk by themselves in the field beyond; indeed, these larger fowls, what with suitable pens, runs, grass walk, and running water, have a good time of it, and no wonder they do well and look well.

From the poultry houses I go now to the dog pens, for Mr. Hodson is as well known as a dog judge as a poultry judge. Stately bloodhounds, every inch gentlemen and ladies, and wild-looking, yet tame and coaxing; deerhounds, rough in coat as their own native heathery hills, are Mr. Hodson's specialities. Two marked and noble varieties. Grand style of dogs, perhaps existing just the same in form and instinct when Ossar landed, or William the Norman conquered at Hastings. I need scarcely remark that Mr. Hodson's dogs were good of their kind. He could not have any dogs which were not good.

Lastly I go to see the Pigeons, kept in a spacious loft over an outhouse. They have been shut-in for me to see. I handle as well as see the famous Blue Dragon cock which has done such wonders in the show pen, and admire Barbs and Magpies. The bulk of the Pigeons are of the Dragon type. Having examined them to my heart's content the trap is opened, and away they go, straight away "on end" as only Dragons can go, far away in the blue expanse for miles over the Somerset valleys and hills. I cannot wonder that Dragons are so popular, and that our forefathers, before the Antwerp and Homing Pigeon days, delighted to fly them. Their naturalness and asymmetry please so much. They, unlike Carriers, can see to eat, and can they not fly? A walk in the afternoon to two very small but very interesting Somersetshire churches fills up fittingly this day, and a poultry talk the evening.

Next morning I have another view of the fowls, the second peep, which I enjoy always quite as much as the first, when I pick out my favourites, make quite sure which are the best, when I look and linger over the birds, and have hard work to keep from breaking the tenth commandment.

Returning to the sunny front of Mr. Hodson's house, which looks quite a home, I find a photographer in possession. By the way, how unconscious of or indifferent to appearance those men must be who can plunge their heads under a black cloth, and lose in a moment all appearance of man save his legs, becoming apparently a one-eyed monster with his head wrapped-up to keep off the cold. There is the terrible photographer having "a shot" at an officer. Lucky man, with his hand resting on one of the deerhounds, and a group of ladies in the background! Lucky officer in more respects than one. Luncheon, a drive back to Bridgewater, and many a look back in thought then and often since upon the pleasant hours spent with "Mr. Hodson the poultry judge at his home."—WILTSHIRE RACTOR.

DUBBING GAME.

DOUBTLESS "WILTSHIRE RACTOR" advocates the non-dubbing of Game cocks with the best intention, but I think he errs very much when he says, "Put a stop to dubbing and fighting will be at an end." I feel sure it would not be the case, but on the contrary gamblers would fight birds with the combs, &c., on. The result would be shorter battles and more cocks killed in the day's fighting.

"WILTSHIRE RACTOR" says that Game cocks are bred to a high state of courage by man's wickedness. If so, let us do our best to prevent the birds from hurting each other so much when they by chance meet, by cutting off the comb and wattles.

Every breeder of Game knows that two birds dubbed can fight some time without hurting each other very much; but let undubbed birds get together and the result is quite different, for after fighting a few minutes one would lose an eye or have a fractured jaw, which must cause great suffering for many months, and perhaps end in death. Would "WILTSHIRE RACTOR" advise all Game breeders to resort to a cross with the Coochin, so that if the birds so crossed commenced fighting the battle would not last long? If this is what we are to breed to we must drop the name of Game. I cannot see any reason why a Game cock's comb and wattles should not be taken off as well as the dew-nails from a dog, also cutting the ears and tail of the hound, &c., all of which are necessary for the animal's comfort.

I am no cock-fighter, still I would always dub a Game cock if it was only to avoid his comb being frost-bitten, which causes the bird to suffer for months far more than he would suffer from dubbing; for this reason I am a great advocate of dubbing.—BLACK RAB.

NORTHAMPTON SHOW.

We noticed the poultry and Pigeons in our last number.

RABBITS were not well treated as regards classes, there being only eight in all, but the entries were good as usual, although without cups or other extras the Lop classes will not fill, and in this case only one class was provided for them, which in our opinion is a great mistake. No show of Rabbits is better managed, clean straw and good food makes them quite as comfortable as in the hutches at home. In Lops, first was a Black-and-white buck in fine condition and straight limbs, 22 inches by 5; second a Tortoise doe rather gay 22 inches by 4½; and third a Grey with splendid head and eye, good colour, but rather stiff in ear, 22 inches by 5. Angoras were a grand class of thirteen entries, the first very large, long in wool, and very heavy cushion and dewlap, while the third lost only in that point; the second being an excessively fine-wooled specimen but smaller. Two others very highly commended came pressing close in quality. Himalayans were a good class of twenty entries, the winners and noticed Rabbits being scarcely out of their babyhood. First about perfect; two, evidently from the same nest, losing only from one rather grey hind foot, and the other a few white hairs on the ears. Second had the best feet points but was rather narrow on the nose; and third a fair all-round specimen. Dutch (of which this locality is the home), had fifteen entries. First a good Tortoiseshell, good nearly in all points. Second Blue, good but somewhat uneven under the belly; and third a most perfectly-marked Black but with odd eyes. Silver-Greys nineteen entries, and the competition keen, the first and second perfect in shade and silvery, the second losing only through loss of down, which was very loose and came off with the least touch. Third large and very even but too light in shade. Pen 1110 was a grand small Rabbit at 15s., and quickly claimed. The Variety class had fifteen entries. First a large Belgian Hare; second a young one of that variety that must eventually come to the front; and third a Silver Cream small but of good shade. Selling class for the varieties had twenty-six entries. First a nice Black Dutch; second a Silver-Grey; and third Angora. A fair class. Lop Selling class had only five entries. First a Fawn-and-white, very good, 21½ by 4½ inches; second Black, 21½ by 4½ inches, not in the best order; and third a Dun 20 by 4½ inches.

Of *Cats* there were fifty in the five classes. In Long-haired males first was a grand Red Tabby, very long and silky in wool; second Grey; and fourth Black, not of particular merit. Females of that variety, first a small Blue kitten but immense in wool, which was very fine in quality; second White, but not nearly so good; and third, a Tortoiseshell-and-white. Tabbies, males, first a grand tiger-barred Cat, evidently young, large, dark in colour, and very distinct in marking. Second the well-known lion, but losing in both colour and marking. Third a Red not well marked but large. The Variety class, male and female, had first a large Black in splendid order. Second a White of great size but not clean; and third a Tortoiseshell of fair colour and marking. A Selling class produced six entries, two Long-haired and a Tabby winning, and these were soon sold. These were well attended to and looked as clean and comfortable as it is possible to induce them to appear.

JUDGES.—Poultry: Mr. R. Tebbay and Mr. E. Hewitt. Pigeons: Mr. W. B. Tegetmeier and Mr. F. Gresham. Rabbits and Cats: Mr. E. Hutton.

ACCRINGTON SHOW.—This is abandoned or postponed. The entries were so few that the entrance fees have been returned. In the opinion of a good authority the arrangement of the classes was not good, and three days are longer than exhibitors like valuable birds to be penned up.

THE LATE MR. DRING'S POULTRY.—We have received letters from many asking whether we knew if the late Mr. Dring's

poultry would be in the market or not. We are in a position to state that Mrs. Dring will, for the present at any rate, continue the poultry establishment, and will now book orders for eggs and despatch them as she was in the habit of doing for her husband. In April we believe any of the stock birds will be for sale, which will enable purchasers to breed from them in time for the great winter shows.—W.

THE TURBIT.

If "WILTSHIRE RACTOR" refers to my statement, he will find that I said, in contradiction to his, that the point to the Turbit's head was the older style of the two, the Shell-crowns only being of later date, he saying the Point was the last. In 1854 I won the ten-guinea cup at Birmingham, and at the same show I took a prize with my Point-headed Turbits. In 1855 Mr. F. Bottom won the five-guinea cup with birds all bred by me; amongst them were Point-headed Turbits. At Birmingham also in 1852 or 1853 I won with Point-headed Turbits, and I showed also, previously to this, all with Points. Again, in 1856 I won the five-guinea cup at Birmingham, one pair of the Toys being Point-headed Turbits. In fact, I never showed a plain-headed bird, or I should not have had a prize.

Shell-headed Turbits were not, I believe, in the prize-list until about 1860. I think I ought to know something about them, as I have had the rare opportunity of conversing with and sketching the birds of some of the then old fanciers in my young days, notably Mr. Bowler, who had the very best loft of Pigeons I ever saw or ever expect to see again. One day being in his loft I noticed some whole-coloured birds, Yellows and Reds, with peaks, and frills, and gullets. He said they were Turbits, and drew my attention to the fact that the Turbit always had a point and Owls were without, for, though self-coloured, still they were Turbits for that reason. I asked him how long that had been so. He said he never knew them any other way. The Plain-headed were in his opinion nothing more than colour-shouldered Owls. Mr. Bowler was then over seventy, and I under twenty. Then that truly excellent Toy fancier Matthew Wicking would not keep such a thing as a Plain-head as a good Turbit. In fact, all the old fanciers were of the same opinion.

I did not say in my article there were no Plain-headed birds, but that "WILTSHIRE RACTOR" was wrong about the antiquity of the Point, and I say so still. The Shell was the later introduction. I have been Judge at Birmingham a number of years; if I live, and again have the honour conferred on me, I think the next Show will be my twenty-first appearance in that capacity, and during the whole of that time I never remember Mr. Cotter (a first-class fancier) or myself ever awarding a prize to a Plain-headed pair of birds.

As regards Mr. Eaton's book, when he presented me with a copy I pointed out to him that the Turbit should have had a peak. He said, "Well, Dean (meaning Mr. Wolstenholme) made a mistake there; but he was unsurpassable at an Almond." I have known my good kind old friend Wolstenholme about thirty-five years as a fancier in that way; also he knew any kind of Short-faced Tumbler. Who does not remember with pleasure his Short-faced Baldheads and his Black Mottles? He was my chief instructor in those breeds, and no one ever had a more gentle master or one more up to his subject.

As regards Mr. Brent, I never looked on him as any authority excepting in German Toys, and I do not value his opinion more now it is in print than I and others did when he wrote. I never saw a good bird in his possession. I always looked on him as more of a naturalist than a fancier.—HARRISON WZIR.

EXOTIC BEES.

THE spread of the Ligurian bee, and the general satisfaction it has given to the apirians of both the eastern and western hemispheres, has instigated a further search for a variety still nearer to perfection; and in addition to our old English friend, the cultivation is extending of several other varieties. There are the Egyptian, Dalmatian, Carniolian, Smyrnan, and Cyprian bees. A stock of the third variety I had the pleasure of exhibiting at the last Crystal Palace Show, and the fourth and fifth were contributed by Messrs. G. Neighbour & Sons. The Egyptians we are acquainted with; but I am not aware that the Dalmatians have yet appeared in England.

By judicious crossing of varieties breeders have attained many valuable improvements in our cattle, and horticulturists have done the same with our plants; there is no reason, therefore, why the thoughtful careful bee-keepers should not eventually effect the like desirable end with our bees. There is room to improve their productiveness, hardihood, and docility. If we could find a breed without stings, or persuade the workers to keep their dreaded instrument for foes of their own species, what a multitude of people would turn bee-keepers.

The Carniolian bee is a native of Hungary. It is well known in France, where it has the character of being very mild-

tempered. The stock in my possession has borne out this character; but I have only had it six months, and as it originally consisted of a queen and two or three hundred workers it has never been in a state of vigour. My juvenile colony is, however, growing, and had as much brood as the workers could cover on Christmas day. The French find fault with this variety, that it is too prone to swarm. Unless its docility proves a marked fact I do not know that it will be any improvement on our common bee. In colour the Carniolian is not unlike the latter, with the exception that the abdomen has rings of a dirty white.

Herr Cori, of Brux in Bohemia, has been very energetic in the search for new bees, and has succeeded in obtaining the Dalmatian, Smyrnanian, and Cyprian varieties. He describes the first as a noble race, worthy of cultivation. They gather their honey from the flowers which grow in the crevasses and ravines of the mountains, very high and steep, flying far where the winds are rough and violent; thus they have become hardy and muscular. In colour they are of the purest black. They have great activity and good temper, so long as they remain tranquil; but if they are disturbed or meddled with they become most wicked, defending themselves valiantly, and attacking vigorously. Herr Cori crossed this bee with the Smyrnanian, and says that the progeny of the Smyrnanian queen by a Dalmatian drone largely surpassed his Italian bees, and these again were excelled by the produce of a Dalmatian queen and Smyrnanian drone.

Herr Cori gives an amusing account of his efforts to obtain a second Dalmatian stock, which efforts were for a long time unavailing, in consequence of the peasants believing that if they sold a colony all their others would die of grief at the loss of their sisters. By chance Herr Cori obtained the assistance of a very high personage at Ragusa, who addressed himself to the Consul-General of Turkey, who communicated with the Pacha of Serajevo, before whom the superstition had to bow, and two colonies were soon on their way to Trieste, transported on the backs of mules for five days over the mountains, thence by steamboat and railway. One colony was in the hollow trunk of an oak, the other in the trunk of a magnolia, and each packed in a wooden box, weighing respectively 142 lbs. and 126 lbs. gross. The hives were completely full of combs, plenty of honey, not one cell broken, and the loss of the bees very small. Extending his search southward, Herr Cori received from Cyprus a queen and two hundred workers, the sole survivors of many thousands composting the stock sent to him. This queen, with good nursing, survived to be the parent of many stocks afterwards distributed over Europe and America. The Cyprian bees also journeyed in their original hive, which was a long horizontal earthenware pipe; and the habitation of the Smyrnanians was manufactured of woven wands laid over with camels' dung. Herr Cori and the Count Kalorati, who have nursed and cultivated the Cyprian bee, describe it as the best bee known, as much superior to the Ligurian as that is to the common bee. There does not appear to be any queen-breeders in Cyprus yet ready to export queens, but I have no doubt such an industry will be established in good time. Our Yankee cousins, always ready for novelty, are so anxious to get a quantity of them, that a scheme is afoot to send a special commissioner to Cyprus to buy or breed queens for America; and a gentleman in England has volunteered to retire to an island in the Bristol Channel to breed this variety beyond the influence of the common drones, on condition that subscribers should be found for fifty fertile queens at £1 each.—JOHN HUNTER, *Baton Rive, Haling.*

OUR LETTER BOX.

COCK MOULTING IRREGULARLY (M. Smith).—Your Golden-spangled bird is out of health, and the secretions are too much at fault to allow the formation of feathers. You would have helped our answer if you had told us your feeding. The seeking for stimulating and unnatural food in preference to ordinary food causes us to have many complaints. We advise you to administer a table-spoonful of castor oil, to follow by feeding on ground oats mixed with milk, and if the birds are in confinement to give plenty of green food, especially lettuce; to give little whole corn, and, if any, good barley.

HOUDANS' LEGS FAILING (C. A.).—We cannot glean the cause of disease in your fowls from your letter. The symptoms you describe would be caused by an improper flooring to your fowl house. Brick, wood, or stone would account for them. We can understand the birds prefer the grass, it is their nature; but there is no reason why they should not frequent the ploughed land, and it is good for their health they should do so. Your roosting house being sheltered from weather, the flooring should be of road grit or the plain earth kept very clean. It is a necessity that fowls should be everywhere able to scratch, and that the surface should not keep their feet unnaturally strained or be impervious to their claws. Ashes are objectionable in every way. They contain no grit, and their particles often pierce the ball of the foot and cause lameness. This may be the foundation of your complaint. Damp will not explain it. Concrete is a bad flooring; remove it. Feed as advised in previous answer, and we believe you will have no cause for complaint.

BANMAN TUMOUR (J. W. M.).—Open the tumour by the aid of a pair of sharp-pointed scissors, and after pressing-out the watery humour rub the place with sirine ointment.

BRAMMAS' EXCRETORIES CLINGING (J. T.).—We keep many hundreds of Brammas, and have no complaint such as you mention. It is generally the result of injudicious feeding. Heating food will cause the appearance of

which you complain. Feed naturally. Give to each bird a table-spoonful of castor oil. Feed them on ground food, barley meal, or ground oats. If in confinement supply plenty of green food. Feed moderately three times per day, and they will be healthy in a week.

FOWL SICKLY (H. Grant).—Your bird has the roup, which is highly contagious. Wash the head daily or twice daily with tepid water. Sulphate of copper one grain daily mixed in oatmeal mashed with ale and plenty of green food. Separate the fowl from all others. If not better within a week kill the fowl.

GRASS IN ROW (J. S.).—The seed from a hay-loft will do. Rake the surface and scatter the seeds thinly. The fowls should be kept out until the seedling grass is an inch or more high.

MATCHING CANARIES (A. Subscriber, Clonmel).—You can match the greenish-yellow cock with the cinnamon hen if your object be merely to obtain a single songster or two. The offspring from the pair may in all probability vary in appearance, some of which will be very dark, others marked, with most likely a yellow bird or so; but you must not expect to find the latter coloured birds of that rich colour good enough to run a race in exhibition competition with yellow birds bred from a pure strain—such, for instance, as from Norfolk-bred birds. There are equal chances of pairing Canary birds of distinct varieties of breed. The produce from such, when the cock birds are well tutored, equally please the ear if not the eye. At the same time we should advise the matching together birds of the same breed—a yellow to buff—and then you might have the advantage of some of the young being fit for exhibiting, supposing the parent birds be of good quality.

SUPERSTITIONS ABOUT BEES (G. E.).—Only ignorant people are influenced by such superstitions.

METEOROLOGICAL OBSERVATIONS.

GARDEN SQUARE, LONDON.
Lat. 51° 38' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1876.	Barom. at 9 A.M. and Sea Level.	Hygrom- eter.		Direction of Wind.	Temp. of Air at 5 feet.	Shade Tem- perature.		Radiation Temperature.				
		Dry.	Wet.			Max.	Min.	In sun.	On grass.			
March.												
We. 8	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	deg.	In.	
Th. 9	29.740	46.5	44.5	W.	42.5	53.5	37.0	52.5	36.1	50.0	0.100	
Fri. 10	29.681	47.5	44.0	W.	42.0	52.5	36.0	52.5	35.5	50.5	0.000	
Sat. 11	29.682	41.5	39.0	S.W.	41.5	47.5	34.5	52.5	30.5	50.5	0.000	
Sun. 12	29.045	42.5	39.5	W.	41.5	50.5	34.5	57.4	31.7	51.0	0.500	
Sun. 12	28.706	35.5	35.5	E.	40.0	43.1	33.4	51.5	31.0	51.0	0.745	
Mo. 13	29.620	35.0	34.5	N.W.	39.0	45.5	29.5	59.0	25.1	50.0	0.000	
Tu. 14	29.573	42.5	44.5	N.W.	39.5	45.5	33.5	55.5	31.5	50.5	0.000	
Means	29.174	41.5	39.5		41.0	46.5	34.5	53.5	30.5	50.5	1.461	

REMARKS.

8th.—A stormy day; wind very high at night with heavy rain and falling barometer.
9th.—Fair, but still windy; slight shower in the evening; snow and hail at 9 P.M.; fine after.
10th.—Very stormy early, but fine by 9 A.M., but rain again by 10; rather showery all day; wind lower at night and quite fine.
11th.—Very fine and bright till 1 P.M., then a slight shower, but fine after.
12th.—Heavy snow between 8 and 9 A.M.; rain or snow more or less all day; very dark at noon; barometer fell seven-tenths between midnight and midday, and rose half-an-inch between 2 P.M. and 5.10 P.M. Heavy snow 1 to 2 P.M., then rain; fair evening, starlight but rough.
13th.—Snow at 8 A.M. for a short time, but beautifully bright before noon; fine afternoon; slight shower about 5 P.M., dull afterwards.
14th.—Wet and windy in morning, but soon cleared off, though the wind continued very boisterous; very wild night.
A week noticeable for low barometer and great oscillations thereof, violent gales, and much rain and snow.—G. J. SIMONS.

COVENT GARDEN MARKET.—MARCH 15.

Two or three samples of Strawberries have made their appearance since our last report, and we shall now look for a regular supply. Late Grapes are making good prices, and first-class fruit is in demand. We have no alteration to quote in forced vegetables, with the exception of Onions, which have dropped considerably owing to a slack demand.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1	0 to 3	Peaches.....	do.	0 0 to 0 6
Cherries.....	12	0 20	Pears, kitchen.....	do.	0 0 to 0 6
Filberts, Cobs.....	lb.	0 0 to 9	Decays.....	do.	0 0 to 12 0
Grapes, hothouse.....	lb.	0 0 to 10 0	Pine Apples.....	lb.	1 0 to 4 0
Lemons.....	£100	0 0 to 12 0	Strawberries.....	oz.	1 0 to 2 0
Melons.....	each	0 0 to 0 0	Walnuts.....	£100	1 0 to 3 0
Oranges.....	£100	0 0 to 12 0	ditto.....	bushel	4 0 to 20 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	dozen	4 0 to 6 0	Leeks.....	bunch	0 4 to 0 6
Asparagus.....	£100	0 0 to 10 0	Mushrooms.....	potato	1 0 to 2 0
French.....	bushel	18 0 to 0 0	Musard & Cress.....	pannet	0 0 to 0 0
Beans, Kidney.....	£100	1 0 to 0 0	New.....	bushel	1 0 to 0 0
Beet, Red.....	dozen	1 0 to 0 0	Pickling.....	quart	0 0 to 0 0
Broccoli.....	bundle	0 0 to 1 0	Parley.....	do.	0 0 to 0 0
Brussels Sprouts.....	£100	0 0 to 0 0	Peas.....	do.	0 0 to 0 0
Cabbage.....	dozen	1 0 to 0 0	Potatoes.....	bushel	2 0 to 0 0
Carrots.....	bunch	0 4 to 0 0	Kidney.....	do.	0 0 to 0 0
Cauliflowers.....	£100	1 0 to 0 0	New.....	bushel	1 0 to 0 0
Celery.....	bundle	1 0 to 0 0	Radishes.....	1 0 to 0 0	
Colewortis.....	do.	0 0 to 0 0	Rhubarb.....	bundle	0 0 to 1 0
Onions.....	each	1 0 to 0 0	Salsify.....	bundle	0 0 to 1 0
Endive.....	dozen	1 0 to 0 0	Sourware.....	bundle	1 0 to 0 0
Fennel.....	bunch	0 0 to 0 0	Seakale.....	basket	1 0 to 0 0
Garlic.....	lb.	0 0 to 0 0	Shallots.....	lb.	0 0 to 0 0
Herbs.....	bunch	1 0 to 0 0	Spinach.....	bushel	4 0 to 0 0
Lettuce.....	dozen	0 0 to 0 0	Tomatoes.....	do.	0 0 to 0 0
French Cabbage.....	1 0 to 0 0		Turnips.....	bunch	4 0 to 0 0
			Vegetable Marrows.....	0 0 to 0 0	

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MARCH 23—29, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	m.	a.
23	Tu	Royal Society at 8.30 P.M. Bristol Show closes.	50.7	31.1	41.9	5	37	6	16	5	34	6	30	27	6	23
24	F	Royal Institution at 8 P.M.	48.7	31.7	40.2	5	54	6	18	5	36	6	49	28	6	14
25	S	Royal Botanic Society at 8.45 P.M.	50.9	32.8	41.9	5	53	6	30	5	47	6	10	0	5	56
26	Sun	4 SUNDAY IN LENT.	51.8	32.6	42.2	5	50	6	21	5	58	7	38	1	5	37
27	M	Royal Geographical Society at 8.30 P.M.	54.1	34.1	44.1	5	47	6	28	6	11	8	59	2	5	19
28	Tu	Royal Medical and Chirurgical Society at 8.30 P.M.	58.0	34.0	46.5	5	45	6	26	6	26	10	38	3	5	1
29	W	Royal Botanic Society's Spring Show.	53.7	33.4	43.6	5	43	6	26	6	43	11	58	4	4	43

From observations taken near London during forty-three years, the average day temperature of the week is 53.8°; and its night temperature 32.6°.

AZALEA INDICA AND ITS CULTURE.

[The following notes were read by Mr. Ollerhead before the members of the Wimbledon Gardeners' Society.]



VARIETIES of *Azalea indica* were first introduced into this country from China in the early part of this century. In referring to Johnson's "Gardener's Dictionary" we find that *Azalea indica* was first introduced in 1808, *A. purpurea-pleno* in 1819, *A. aurantiaca* in 1822, *A. variegata* and *A. phoenicea* in 1824, and *A. lateritia* in 1838. I will not guarantee the correctness of these dates, but undoubtedly they are pretty nearly right,

and the varieties mentioned are about the oldest in cultivation.

For some years past nurserymen and gardeners have devoted much time and attention to the cross-breeding of this valuable genus of plants with the view of improving the quality and colour of the flowers, and it is very gratifying to know that their labours have not been in vain, as all the best varieties now in cultivation are cross-breeds. The numerous varieties of *Azalea indica* are invaluable for furnishing the stages of conservatories at a season when good flowers are scarce. If a number of the early and late flowering varieties are at command and properly managed they may be had in flower from Christmas to May, but to accomplish this proper accommodation is required for the necessary forcing and retarding of the early and late varieties. They are also of equal value for exhibition purposes, for floral displays on dinner-tables, in drawing-rooms, saloons, entrance halls, and, last but not least, they are indispensable as cut flowers for bouquets. In fact, I may say that their merits are sufficiently known to make them popular plants with everyone who has any real love for flowers.

The propagation of the plants is effected by seeds for new varieties, and by cuttings and grafting for multiplying individual species or varieties. Seeds should be saved from the best varieties, the flowers of which have been fertilised with the pollen of another variety with the view of improving the colour and substance of the parent or with the hope of securing a young progeny of stronger constitution. The hybridiser always has some object in view, and is guided by his own ideas in endeavouring to secure such object. The flowers having been fertilised, they should then be protected with a piece of thin gauze to prevent further impregnation by insects, at the same time placing the plants where they will enjoy plenty of light and air and where they can be kept dry. After the flowers have faded the thin gauze may be removed, as there will then be no necessity for it to remain over the flowers.

The seed should be gathered as it ripens, and be sown in pans in rough peat early in January, placing the pans in a close warm house and cover with panes of glass, never allowing the soil to become dry, or the seeds may perish when they are germinating. As soon as the seedlings make their appearance remove the panes of glass

and keep the pans in a humid gentle warmth, with as much light as possible, and as soon as the seedlings are large enough to handle pot them into thimble-pots in a compost of sandy peat, placing them in a similar situation to that recommended for the seed pans until the plants are established in the pots, when they may be treated as will be advised for established plants. Shading from the sun will be necessary for the seeds and plants until they attain sufficient strength to endure it.

In propagating from cuttings these should be taken from the shoots of the current year, selecting those that are moderately strong. When the wood becomes a little hard, or what is known as being half ripe, the points should be taken off about 2½ inches long; cut below the lowest joint which they may have, removing one or two of the lowest leaves from the lower part of the cutting, and then insert them in small pots filled with very sandy peat, say six, ten, or twelve cuttings in each pot according to their size; plunge them in a bottom heat of about 80°, with a top heat of 70°, where, if carefully attended to, 99 or 100 per cent. of the cuttings will grow, the principal points to attend to being shade and moisture. As soon as the cuttings have made roots they should be gradually exposed to more light and air, be potted off, and kept in a close atmosphere with a little shade until they are established, when they may be treated as other established plants. Although the propagation by cuttings is a speedy way of raising a stock of any desirable variety, still it is not a system that I would recommend, because plants from cuttings never grow so compactly as those obtained by grafting. Plants from cuttings are also very liable to produce a quantity of gross shoots or suckers from their base, which is detrimental to the plants, and although these are frequently removed, the plants will have a tendency to throw up more. I have also noticed that some varieties struck from cuttings are very liable to die off even after they have attained a great size without any apparent cause—a circumstance which I must say is very grievous to the cultivator.

If you wish to propagate *Azalea indica* by grafting you must first obtain a supply of stocks, which might be raised from seed saved from the strong-growing varieties and treated in the way as previously advised, selecting the strongest-growing seedling plants, and when these have attained sufficient strength work on them the varieties desirable to propagate; or stocks may be raised from cuttings selected from such vigorous-growing kinds as *phoenicea alba*, or *Fielder's White*, and when these have attained sufficient strength they may be operated on in the usual way.

The best mode of grafting is that known as side-grafting. The scions should be taken from the parent plant about 1½ inch long, then with a sharp knife make a long slanting cut to the base of the scion. A similar slice must be taken out of the side of the stock, so that the outer edges of both stock and scion will meet together, which is a matter of great importance to insure success; they should then be neatly bound together with a piece of worsted, and be placed in a close frame in a propagating house or

similar situation, and be carefully attended to with a proper supply of moisture. The best time to graft is during the spring. After the scions have united to the stock and they have made a little growth the ligatures should be slackened, and the plants be exposed to a little more light and air, and when they are considered to have made a perfect union the bandages may be entirely removed, the head of the stock be cut off close to the scion, and the plants exposed to the temperature of an intermediate house until they have completed their season's growth, when they may be treated as established plants.

Although I have entered into the propagation of these plants, I do not mean to say that a gardener would be studying economy to propagate his own plants, as he would have to wait a long time before he would have the pleasure of seeing flowers, and unless he paid unremitting attention to the plants the chances are that he may lose 99 per cent. of his young plants.

In nurseries where Azaleas are propagated by the thousand men are employed for the special purpose of tending to their wants, and this being their only study they succeed in turning out ninety-nine plants, and very often a hundred, out of every hundred grafts. This places nurserymen in a position to offer good plants well set with flower buds at a very reasonable rate. Such being the case, I fail to see where true economy lies in a gardener trying to propagate his own Azaleas.

We now come to the general cultivation, and will commence with such plants as are usually met with in the trade—I mean plants well studded with flower buds and grown in 4 and 6-inch pots. Should it be desirable to obtain specimens as quickly as possible I would advise the cultivator to pick out all the bloom buds and place the plants in a little heat early in the year, so as to excite them into growth. As soon as the growth has commenced they should have a liberal shift into pots a size or two larger, using the following compost:—To five barrowloads of strong fibry peat (not adhesive nor yet that light fibry material we so repeatedly see used), add one barrowload of light fibry loam with a liberal mixture of sand. This should be all pulled to pieces, not chopped, and the fine drossy material rejected, the sand to be mixed through it, and if damp it should be put into a dry open shed, and turned several times before using. Avoid making it dust-dry, otherwise there would be some difficulty in inducing it to take water after the plants have been potted. The best way to test the soil is to thrust the hand into the heap and bring out a handful from near the centre, squeeze this up in the hand and then drop it on the floor. If it falls freely to pieces the compost may be used; but, on the other hand, should it adhere together the heap should be turned once or twice as may be necessary before using.

After the plants have been potted they should be placed in gentle heat, keeping them well syringed, also shaded from the sun, and giving little or no air until they have hold of the new compost, after which time the temperature may be increased to 60° at night, with a rise to 75° by fire in day, or 80° by sun heat, always bearing in mind to keep the passages, walls, and stages well deluged with water, but taking care not to give too much water to the roots. When the plants are established they will be benefited by a weak application of Standen's manure or cowdung water. I have repeatedly watered Azaleas with strong cowdung water with advantage, but I always take the precaution of applying it to well-established plants. Under this treatment the plants will make rapid growth, and will set their flower buds early in the season, but the sooner these can be removed the better, and push the plants on into a second growth, which is desirable to have accomplished as early as possible in order to give the plants a good rest preparatory to making two growths the following year; but in this case as in the previous one the flower buds should be removed as quickly as possible, and not allowed to remain to waste the energies of the plants. By repeating this treatment for a few years it is astonishing how quick a lot of plants may be worked up into a size fit for exhibition purposes.

But should the cultivator not wish to grow them on for exhibition, and merely require them for home decoration, the plants may be grown in a much cooler temperature. They will make excellent growth, and set their buds well in a temperature of 60° to 65°, or even lower than this. Some cultivators place them out of doors in the month of May or June to finish their growth and set their buds; but this, in my opinion, is a practice that cannot be too strongly condemned. The plants are subjected to heavy rains, which are anything but beneficial, but rather otherwise; and although an attendant may be there to turn them on their sides in the daytime, it

is not always that they are on their sides during heavy rains in the night. Some cultivators place them in their vineries to make their growth, and doubtless such situations are favourable for the growth of the plants, but the very fact of them introducing thrips into such structures is quite sufficient to induce the cultivator to keep them out.

In reference to preparing plants for forcing, some early-flowering varieties should be selected and pushed into growth as early as possible, so as to set their buds early in the season, and these should be well advanced before the plants are allowed to rest, as on the state of the buds entirely depends the time required for forcing them into bloom. If they are properly managed the plants should flower in eight weeks after being introduced into heat. If Azaleas are not required to flower before April or May a winter temperature of 40° will be found quite sufficient.

When I undertook my last situation I found a number of Azaleas in a very bad state, and scarcely a flower bud on them. Immediately they commenced growth I gave them a drying, and had some soil (as previously described) in readiness, and turned the plants all out of their pots, beating the soil out of the roots with the flat side of a spade; in fact, I shook them out just as clean as if they were Pelargoniums, thinned out all weak wood, and after potting them into smaller pots I devoted a house to them and treated them in the way described for exhibition plants, except that I left the bloom buds on the second growth, after which I was well rewarded with a good display of flowers the following year.

In concluding my cultural remarks I would say that Azaleas should never be allowed to flag for want of water, as this would be sure to end in the loss of foliage. When watering them always fill up the pots sufficiently to cause the water to moisten the whole ball of soil. Always keep up abundance of moisture during the growing season until the buds are set, then cease syringing overhead, but always keep the passages and walls moist except in frosty weather. Never water the plants until they require it, and always keep them free from insects. Never adopt that horrible system of training by twisting and crossing the shoots to bring the plants into a stiff unsightly shape; but carefully tie out the branches and encourage the shoots to assume a natural appearance. In potting always pot firmly.

Azaleas are liable to the attacks of brown and white scale. These may be destroyed by turning the plants on their sides and giving them a thorough syringing with water heated to 140°, turning the plant round as the operation is going on, so as to make sure that every portion of the plant has its share of hot water; but be careful to keep it from the roots. Brush the leaves and stems in half an hour after the application, and if not effectual repeat the dose; or use Gishurst compound, 8 ozs. to a gallon of water heated to 140°, and apply the solution in the same way; or soft soap in the same proportions. Any of the above remedies if properly applied will be found effectual.

Azaleas are frequently infested with thrips, and the best remedies that I know of is to fumigate strongly with tobacco every other night for a week or so; or give the plants a thorough syringing with Gishurst compound, 4 ozs. to the gallon of water, being careful to keep the mixture out of the pots. This may be done by turning them on their sides. In ten or twelve hours afterwards syringe the plants with clean water, by which time they should be free from every thrip.

A ROSARIAN HERCULES—ROSE STOCKS.

Now the winter is nearly over, and the Hyacinths, and Tulips, and Snowdrops are making our borders gay with their bright colours, the hearts of all rosarians begin to throb with excitement at the thought of the coming campaign. That this will be an unusually long one I think your columns show. We may say it commences on the 14th of June and lasts till the middle of July. But what a month it will be! what hard work, what excitement, what sleepless nights will be ours! For, taking the Sundays and Mondays away when no shows can be held, there are only about twenty days left. Indeed I do not think you can say more than fourteen, as there are scarcely any shows held after the 8th or 9th of July. Fourteen days, then, are all that will be available for Rose shows, and on these must be held the Crystal and Alexandra Palace Shows, the Westminster Aquarium and the Botanic in London; while in the country—Exeter, Hereford, Maidstone, Frome, Birmingham, Wisbeach, Bristol—eleven great shows within a fortnight is verily hot work.

I shall never forget the week last year that the Alexandra Palace and Crystal Palace Rose Shows were held. The Alexandra was on the Thursday and Friday, and the Crystal Palace the following day. On the Tuesday in the next week was Hereford, and on the Thursday Birmingham. My friend Mr. Baker, the king of the amateurs, attended all the shows, and I think it is worth recording how he did it. How his strength held out is quite another question. He has, by the way, the advantage of night mail trains. He left Exeter on the Wednesday night for the Alexandra Palace by the 10.12 mail, having staged his blooms since sundown that evening, arrived at the Palace about 7 A.M. next day, staged in every class, judged the nurserymen, took first prizes in every class save one; went back to Exeter that night by the limited mail, landed there at 8 A.M. Friday, went home, and found his man had begun to stage for the Crystal Palace, set to work without delay, and staged what he wanted; then left Exeter that night by the mail, arrived at the Crystal Palace about 8, staged, and took the first prize in every class; went back to Exeter that night by the mail, and at last went to bed about 4 o'clock on Sunday morning, which was the first time he had been between the sheets since Tuesday night. But in spite of all this, he assures me he went to church in the afternoon. He is churchwarden, I believe, and so made a grand effort. On Monday he was up at 3 A.M. to stage for Hereford. He and I travelled to Hereford together that night. Again, next day he staged and took the first prize in every class (I coming in here a good second), judged the nurserymen, had luncheon, and set off again to Exeter to stage for Birmingham; left Exeter next day by the day mail and arrived at Birmingham on the same night, and staged next day in every class; returned the same day to Exeter, having had eight days' ceaseless toil and not one unbroken night's rest, and at the end of it all he was as fresh as a daisy and his digestion as good as ever. And not till Birmingham was over did one of his magnificent plants droop its head and say, "Enough. I am done, although you are not." Which had the best constitution, the Roses owned by him or his matchless self I cannot determine; but they are both equally wonderful and the object of my lifelong admiration.

"Ah!" I think I hear someone grunt, "Ah! Roses forced like his were will be fit for nothing another year. They will have been growing on all through the winter, and when the time comes when they ought to make a start they will have no more life in them than a telegraph post or a tin kettle. Wait and see what he does this year before you commend his system of growth." Ah, yes, wait and see, and also listen, my would-be objector. No doubt you are right; they would have gone on growing, but he stopped that little game. He took up every plant, pruned the roots, put in fresh manure, changed in many cases the position, and then put them back again, and we shall see what those Roses will do.

One remark more about his plants, and it is one which I consider most important. They are all dwarfs, and, with a few exceptions, all worked on the Manetti. Now his soil is a strong red marl; it is none of your strong, fluffy, sandy "blow-away," but good, honest, moderately stiff loam—good soil for Briars as well as Manetti, and some Briar Roses grown in similar soil at Mr. Robert Veitch's nursery will show that this is so. Yet, with the exception of a few seedling Briars Mr. Baker has nothing but Manetti Roses. Then what follow? Why, first three cheers for the Manetti—there is no stock like it; it possesses every good quality and no bad one; it is *par excellence* the stock for Roses. And secondly, standard Roses are a mistake. "What!" someone again objects, "you condemn standard Roses because one man has been so successful with the Manetti!" Not so; I think that is an instance of the value of dwarfs on the Manetti; but my objection to the standards is on far graver grounds. I suppose no one ever gave them a better or fairer trial than I have done. I took a field, the soil was poor I allow, but virgin, and I dressed it very highly indeed; I am ashamed to put down what I spent in manure, but it was at the rate of 200 tons to the acre. I had two men collecting Briars all the early winter, and put in ten thousand. I gave a penny for each Briar, and in due course budded them, and then I thought no one could come near me last year. And what was the result? I never did so badly at the shows in my life. The only first prize I won in the year was for Teas at the Alexandra. I never took a prize at all at the Crystal Palace, nor at Nottingham, Huntingdon, and other places. The Briars would not grow, or bloom, or do anything but throw up suckers; and when I came to move them this winter, out of my ten thousand Briars

planted in 1878 and budded in 1874, how many plants do you think I thought worth removing? Just 1800. Now if that was not a fair trial for standards I do not know what can be.

"When will you be in bloom?" asked Mr. George Paul of me at our Exeter Show, where I could not stage a box of bloom to save my life and credit. "Well, I don't know—not before Birmingham, I am afraid, for my Roses are all maiden Briars." "Maiden Briars! best of all, then." They may be in some soils, but not in my case. Every wind of heaven blew those wretched plants to and fro. I spent £20 in stakes and £2 in raffa grass to tie them. I had a man doing nothing but weed, and I was ever tie, tie, tie, but to no purpose. Hundreds were blown clean out at the bud, hundreds died because they had no roots worth naming, and the place where they grew is now a mausoleum and a wilderness, and a Rose Grave of Adullam too. Such is my experience of standard Roses; but to bring the matter to a practical issue I will name the objections to them in order.

1. They are so expensive. (1) To buy them you must give fifty per cent. at least more than for dwarfs; (2) they require stakes and far twine, and they demand much more labour and time than dwarfs. If you bud them you have to watch the growing bud and be for ever tying it up.

2. They do not live half or a quarter of the time that dwarfs do. Their existence is artificial, and they have constantly to wage warfare with their adopted parent. The stock shows fight in every possible way. It throws out suckers from its roots and offshoots (or "robbers," as my children call them) all down their stems. They give the bud no peace while in its childhood, and then when it is old enough to take care of itself then the unnatural parent dies.

3. They are more subject to attacks from insects than dwarfs. The Rose grub hides itself in the stock just where the knife mark is, and comes out with the spring to leave a nasty little greasy grub in the young leaf, which if not discovered ruins the bud.

4. They are ugly, ungraceful, like mopsticks, and when not in flower or foliage are positively unsightly on your lawn.

5. The stocks are most difficult to procure.

I had to make presents to the farmers whose hedges were ravaged by my Briar-men, had to rig out the latter with new clothes when they had done; for, as they pathetically said, "they were scarcely decent, and really the police be that sharp," &c. Then, too, the stakes are of great moment, even if you live like I do in a "woody country." "Look around you," said the architect to my predecessor who built this sweet nest, but who complained that there were no grates in the fireplaces, "Look around you, and you see nothing but wood. This is a woody country." And the result was that for the sake of appearances he had to sit always with the door open, and every high wind used to send the burning wood to make friends with his pictures.

The upshot of all this is that any one who reads this journal and who stands in need of advice like I do—e.g., in respect of pruning and tending Peach and Pear trees—is advised to have nothing to do with standard Roses unless the soil consists of the very strongest clay. Let the Dog Rose bloom in the hedges, follow its "sweet will" undisturbed; let it caress the wild Cherry and protect the Osmunda regalis, and when the rains of spring and summer drench it with moisture, let it drop reviving dew into the cup of the thirsty Primrose and rejoice the heart of the ever-green Moss. Do not injure it with your keen-edged iron; do not spend the mighty strength that Nature and no end of harsh cider has given you in clawing up from its free home the Briar, the wild Rose that Nature claims. Leave it unhurt so that it may do its work and add its quota to that result which in England may always be seen—"all things bright and beautiful;" and keep, my friends, my rivals, my enemies even (if I have any), keep to the Manetti.—JOHN B. M. CAMM.

RINGER APPLE.

A CORRESPONDENT has written to ask information about an Apple called Ringer. The fruit is large, 3 inches wide and 2½ high, roundish and flattened, obtusely angular on the sides and round the eye. Skin yellow, with tinges and broken stripes of pale crimson here and there; and the whole surface is sprinkled with thin patches of pale brown russet. Eye open with erect pointed segments set in a pretty deep and angular basin. Stalk three-quarters of an inch long, stout, deeply inserted in a deep Nonpareil-like cavity. Flesh yellow,

very tender and juicy, with an agreeable acidity and good flavour.

This is a second-rate dessert Apple, but excellent for kitchen use from November till February.

AN OLD BLACK PRINCE VINE.

I RAISED this Vine from a cutting about forty years since. I stuck it into the wall border about the centre of out-buildings which front full south. For many years very little notice was taken of it, and the gardener who used to prune it did not understand the art, and desired to have it taken up and the border planted with more profitable fruit trees.

A gentleman's gardener in the village looked at it and recommended its being cut down to the bottom, as nearly all the fruit spurs had been cut off. I then began to take a greater interest in this Vine, and trained up six canes, and also took lessons on Vine pruning, and for many years had abundance of fruit but unfortunately never quite ripe.

About seven years ago I wrote to Mr. Knight of Hampton

of one size, not more than from four to six on a root, but of excellent quality. I planted again last year from the smallest whole tubers, giving them plenty of room. The crop was better than before, nor have I found a single tuber diseased. Near to these were some of Suttons' Flourballs and also an early kind of Regent, both of which were more or less diseased. We are eating the Victorias now, and better Potatoes I have never seen. In reading so much about other persons' experience I feel compelled to add my mite to the discussion.—J. C., Brentford.

THE ARRANGEMENTS OF COLOURS

IN THE BEDS OF THE LONDON PARKS AND GARDENS.—No. 2.

PLANS for effectively planting round-shaped and oval-shaped beds have been submitted, and we may now usefully refer to other forms. The shape of beds is generally determined by individual taste, some owners preferring simple and others intricate forms. Occasionally, however, the shape of the grass plat and its position suggest the form of bed which is

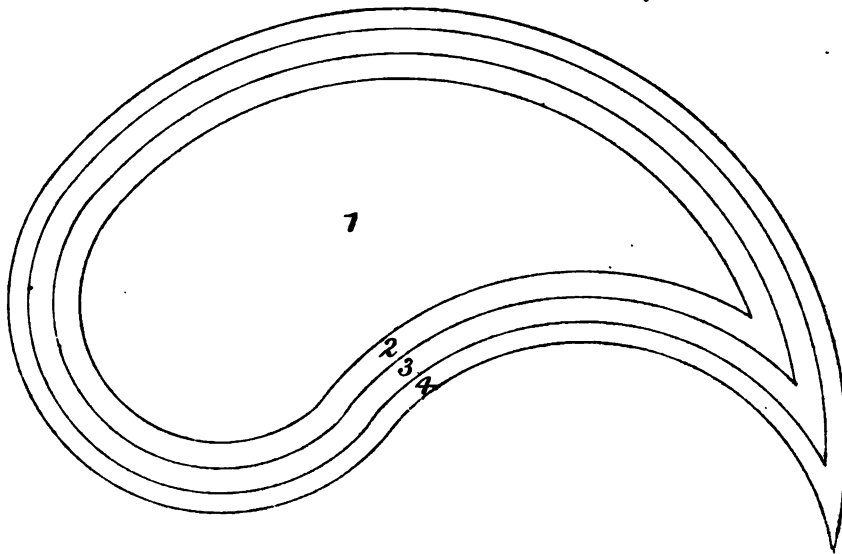


Fig. 62.—Bed O.

Court, asking his advice respecting putting up a glass case. He very kindly gave me great encouragement and much useful information in the management of Vines. Mr. Tillyard, the Earl of Yarborough's gardener at Brookley Park, came to look at it and pronounced it a very healthy Vine and recommended my putting up the present glass cases, the result of which I send you. The first year, 1870, the Vine produced 182 bunches; 1871, 390; 1872, 421; 1873, 856; 1874, 428; 1875, 501. Total in 6 years, 2278. All ripened without any artificial heat. The Grapes also keep well in the case. I usually have plenty hanging at Christmas and later.

This winter I have cut off many of the old spurs, peeling off the loose bark and painting with a compo of soft soap, sulphur, soot, and clay, with a little powdered hellebore root, and washing the back wall with lime and sulphur. Every summer I have thinned very many bunches out, also thinned the fruit in the bunches left, but I think of thinning them more severely next season to have the Grapes larger. The bloom has always been very good, and the foliage is splendid in the autumn.

The case which only covers the branches (the stem and border are unprotected), is 94 feet long, 4 feet deep, and 18 inches from the wall. The stem of the Vine near the bottom is 18 inches in girth. Behind the building is a large drain or sewer, generally a running stream, which I am told is of great advantage to the Vine.—J. E. RANSOM, Kirmington, North Lincolnshire.

ABOUT POTATOES.

Two years since I bought some Paterson's Victoria Potatoes for consumption, and selected the smallest for planting. The result was rather a small crop, but all the tubers were nearly

most appropriate. Bed O is a simple yet a favourite-shaped bed, and is particularly suitable to many situations. The following has proved a good mode of arrangement:—

BED O.

1. *Coleus Verschaffeltii splendens*.
2. *Centaurea ragusina compacta*.—As its name implies it is more compact in habit, and not so coarse towards the end of the summer as *C. ragusina*. It is propagated by seeds and cuttings. To induce the plants to seed pick out a few of the healthiest plants in spring, pot them in good fibry loam, and let them become potbound, which will cause them to flower more freely. Leave them out of doors in a sunny place, as they do not seed so well under glass. It is a good plan to brush the flowers with a camel-hair brush in the middle of the day to scatter the pollen. The flowers should be kept dry by protection. Most people strike the cuttings in the autumn, but I strike all mine in the spring, and I have good plants by bedding-out time. I take the top and side shoots without disfiguring the plants, and insert the cuttings one in a small pot (thimbles), placing them in bottom heat. A hotbed is best where the cuttings will be close to the glass. They must have a little air and plenty of light, for if kept close and shaded they will damp-off. If treated in this way they will take root in ten days.

3. *Iresine Herbatii*.—Its prevailing hue is a deep chocolate brown, and presents when seen against the sun transparent ruby and rose hues, which make it very effective, especially when associated with the silvery foliage of the *Centaurea*. It is propagated by cuttings struck in spring. The 1st of June is quite soon enough for this plant to be turned out. It can be kept to any uniform height by pinching and pegging.

4. *Abutilon vexillarium aurea*.—A distinct and effective variety. Its yellowish marbled and blotched leaves are distinct and beautiful. It is of a trailing and branching habit, and is a very desirable acquisition for margins, lines, beds, and borders. It is propagated in autumn and spring by cuttings struck in heat.

BED P.

This is a bed of a totally different character, and should be planted as follows:—

1. *Lobelia Blue King*.

2. *Cineraria scanthifolia*.—A robust silvery-foliaged bedding plant, with leaves somewhat resembling those of *Centaurea candidissima*, but the plant is of a more compact habit than the *Centaurea*. It is valuable addition to the silvery foliage plants. It is propagated from cuttings, which in the autumn will root in a cold pit or frame. In the spring bottom heat is required for striking the cuttings. Perhaps it would be as well to state that cuttings of white or grey silvery-foliage plants do not require to be shaded as much as others, as white is a non-conductor of heat.

3. *Alternanthera amena spectabilis*, brilliant magenta red.

4. *Tagetes signata pumila*, green.

5. *Alternanthera paronychioides major*.

6. *Lysimachia nummularia aurea*, or the Golden Creeping Jenny.—This is a distinct ornamental-foliage plant; the leaves and branches are of a bright golden yellow. The original type of this plant (Creeping Jenny) is well known as one of the most useful for vases or baskets, but this golden sport is well adapted for decoration in the most exquisite arrangements. I have used it in Kensington Gardens with the greatest success.

It is easily increased by cuttings put in any time between March and September with or without bottom heat. It is quite hardy, and I have no doubt it will become a general favourite both as a bedding and basket plant.

7. *Meibomia secundula glauca*.—N. Cole, Kensington.

WHAT GARDENERS MAY SEE AT EXETER.

In you, gentlemen, ever long for a little change, and yet not too violent a one, and desire to have the delights of the country together with the luxury of a city, let me recommend you

some day to take the 2.10 express on the London and South-Western Railway and land soon after six o'clock at the fair metropolis of the west—Exeter. If you do not find Exeter is the pleasantest place that you have ever been at I shall be much surprised; and not only that, but one where you can live equally well and for half the money that you spend in London. There is a capital club close to the public promenade called Northenhay where we hold our Rose shows, and close to the club you can have excellent lodgings at a most reasonable rate. For 10s.

a-day you may live like a prince and enjoy yourself too at the same time. I have just been spending a couple of nights there, and thought I would write and tell you about it. I should like to have you two elected as honorary members of our club, and show you what a charming life you can lead at that elysium.

You have everything you want there. Do you wish to see a few sweet flowers which will remind you of summer and make you forget that you are in midwinter, walk through Northenhay and across the railway, and there is Mr. Robert Veitch's nursery at your service. "You will find all the houses open, and if you would like the foreman to go round with you, you have only to ring the bell." But you want no foreman to understand flowers; besides, all the plants are labelled. You enter a door, and lo! every delicious scent salutes your senses, and flowers of countless hues greet the sight. Here we are in the Hyacinth and bulb house. Cyclamens, Primulas, Hyacinths, Tulips, and a few Anemones and greenhouse Rhododendrons, and numbers of other flowers, combine to make you forget that it is raining outside and that your feet are caked with mud. Then a little further

on you enter the Palm house where Palms and gorgeous foliage plants lead up to the Camellias, which now are in full bloom. I saw some superb blooms of varieties new to me, and there was every prospect that the flowering season would last till Easter, which, by the way, all the wise men who draw up the almanacs have fixed a week too late. "Why, old fellow," a man said to me, "you must look out that you don't have a Sunday too much this year." Well, however late Easter may be, Mr. Veitch will have some Camellias for us on that "day of days" at least. From this house we go to the Orchids and Lycopodiums and tropical Ferns. Hundreds of that charming

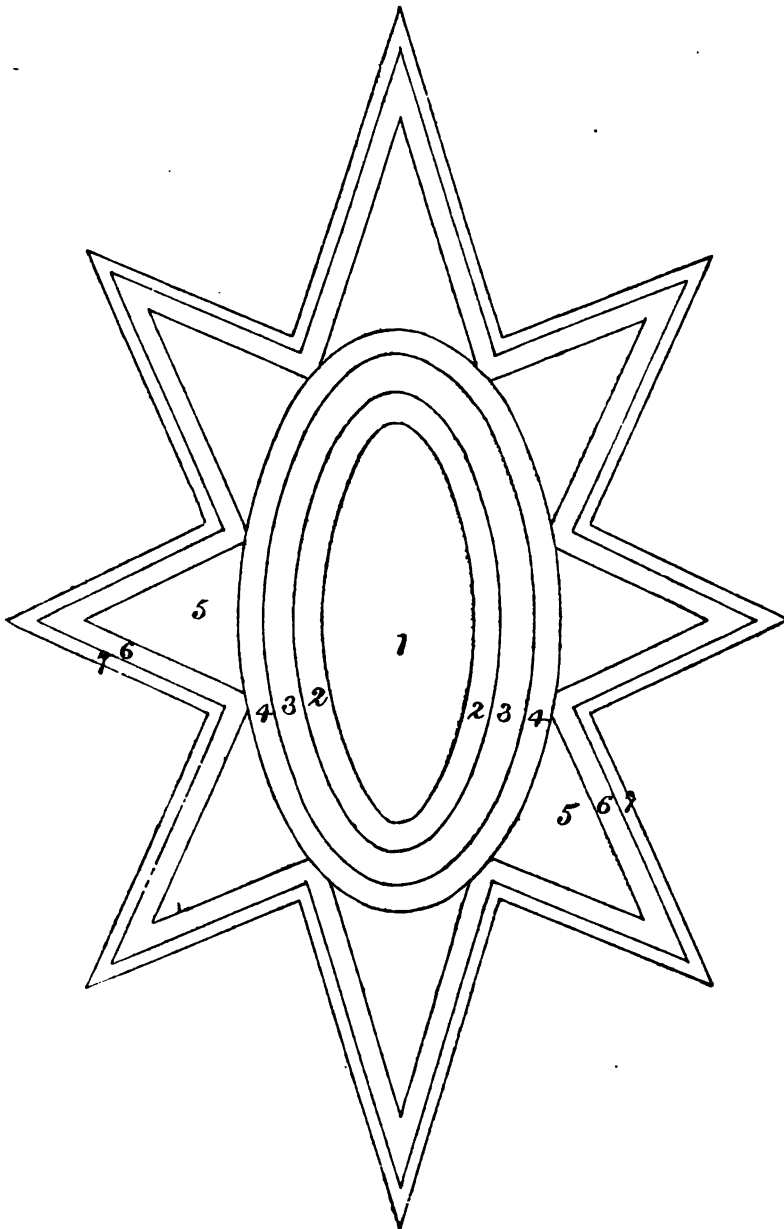


Fig 70. Bed P.

Adiantum farleyense, Paraleys Ferns, &c., line your path, and you long for the wealth of the Rothschilds so as to buy them all. Then out once more into the open to see how the Roses look, and magnificent standards there are, and numbers of them still left to tempt the visitor.

But while lingering here the cathedral's deep musical peal of ten bells tell you that it is near twelve, and that evensong will soon be sung, and you stroll away to that glorious decorated pile which is now being so beautifully restored. Evensong is now said at twelve noon, and very odd it sounds to hear one of the evening prayers read before you have well digested your breakfast. But there is a very good reason for this temporary arrangement, for it is the workmen's dinner hour. If you visit us on the 23rd of June, the day of our next Rose show, if we don't give you a welcome and send you back home in good health and good spirits, well, my name is not—JOHN B. M. CAMM.

PRIMULA DENTICULATA.

It is a very modest grower, not unlike our common Primrose in its appearance, having a rather close tufted growth, from which rise early in February meaty stems about 6 inches high crowned by umbels of lilac flowers with yellow eyes, each pip flat and having no cup or reflex. It is indeed of dainty loveliness as a pot plant for the greenhouse during February and early March, continuing a long time in beauty. Its flowers, though small as compared with *P. aemona* and vars., are numerous—over thirty in some instances in an umbel, not the least charm of the plant being its meaty stems. I have had plants of it in bloom the past fortnight, or from the middle of February, and it certainly will last a considerable time, as several umbels rise from a crown, and as these are tufted the bloom is profuse. I have had the plants in a light airy greenhouse since September.

What this plant appears to require is a rather stiff or yellow loam with grit, and to be placed in a frame after flowering, keeping cool, airy, and moist, with plenty of light but shaded from hot sun, and potted in July or early August so as to have the plants well established before autumn. It is no miffy plant, but possesses a good hardy constitution, free alike in growth and flowering. Its flowers contrast well with the clear fragrant yellow of the Abyssinian Primrose which flowers at the same time.—G. A.

NOTES AND GLEANINGS.

THE Council of the Royal Horticultural Society have awarded to Dr. Hogg a GOLD MEDAL for his discovery of a new classification of Apples.

FROM the extremely MILD CLIMATE OF THE SCILLY ISLANDS it might be thought that they would contain many plants unknown in England. Such, however, is not the case, for with the exception of the trees and shrubs specially cultivated in the Abbey gardens, the rare sorts of Ferns, as the *Asplenium marinum* and *Osmunda regalis*, form the chief botanical curiosities. The violent storms to which these Islands are exposed hinder the growth of trees, the absence of which gives to the Scillies a somewhat barren look; indeed even bushes need to be protected from the wind by walls or hedges in order to do well. The great crop of the islanders is that of Potatoes, which are ready for digging on an average ten weeks earlier than in the midland counties, and is one of the chief sources of their wealth. Next in size to St. Mary's, and of more interest to the tourist, is Treaseo, on which the lord proprietor of the Islands resides. Leland speaks of Treaseo as the largest of the Scillies, and it would seem that either he was incorrect in his account or that Bryher and Samson, which are now separated from Treaseo by the narrow channel of New Grimby harbour, in his day formed with it one large island. The lord proprietor resides at the Abbey, the gardens of which are one of the great sights of Scilly. In those gardens rare tropical plants and trees, which in England can only be kept under glass, flourish in the open air through the wonderful mildness of the climate.

GARDENERS in the north need not envy their southern friends on the genial weather which they are enjoying; the spring quarter opened most unpropitiously, and the ground yesterday in London was covered with snow.

MESSRS. MACMILLAN & Co. have commenced publishing "SCIENCE PRIMER," their purpose being to furnish the first

instruction needed by a pupil in any science he wishes to master. The first number is "Botany." The author, Dr. J. D. Hooker, shows in it that he is able to effect that most difficult of combinations, brevity and clearness. It contains many and good illustrations.

VERY deservedly Mr. D. Thompson's "HANDY BOOK OF THE FLOWER GARDEN" has reached its third edition. It is one of the most useful on the subject, telling which flowers to select, how to arrange, and how to cultivate them.

MAGDALEN COLLEGE, Oxford, is leading the way in an "innovation" which will be heartily welcomed. It has commenced FREE COURSES OF LECTURES ON BOTANY, ZOOLOGY, AND CHEMICAL PHYSICS, free to artisans resident in Oxford, and delivered by Professor Lawson and Messrs. Chapman and Yale on Saturday evenings in Lent, Easter, and the long vacation.

AN experiment in HEATING by the aid of GAS is being carefully conducted by Messrs. Veitch & Sons in one of their plant houses at Chelsea. The apparatus, which is patented, is perfectly novel, inasmuch as the elements of combustion, instead of vitiating the atmosphere, are turned to account in supporting the plants. The principle is this—that the noxious gas, instead of escaping into the atmosphere and polluting it, is hermetically sealed in a metal cylinder, in which is a pipe conducting a regular current of cold air from the external atmosphere, and the gas coming in contact with this cold surface condenses and trickles down into a vessel placed at the bottom of the apparatus. This gas water is given to the plants. The stove is having a rigid and careful trial, the most tender plants being placed immediately over it, and are watered with the "home-brewed" liquor. Not the slightest smell can be detected from the stove, and as we saw the plants they were healthy and flourishing.

THE recent HEAVY GALES have done much damage to ornamental and forest trees in many districts. We have noticed some large trees blown down in Kew Gardens; also some of the fine Elms fringing the moat which surrounds Fulham Palace, the seat of the Bishop of London, have been uprooted by the violence of the storm.

A CORRESPONDENT informs that all that is required to obtain a full crop of BERRIES ON THE AUCUBA BUSHES, is to plant male plants in the garden, not necessarily close to—that is, touching the female plants, and without further trouble the trees will become clothed with richly-coloured fruits. This is in a great measure confirmed by the Aucubas at Denbies, which are referred to in another column as being heavily fruited with but slight aid given by the gardener. Aucuba berries are this year unusually plentiful, and the plants containing them are highly attractive.

IN addition to the grant of forty guineas made by the Alexandra Palace Company towards the prizes of the second INTERNATIONAL POTATO SHOW to be held in September, special prizes are contributed by Messrs. Sutton & Sons, Messrs. James Carter & Co., Messrs. G. Gibbs & Co., Messrs. Hooper & Co., Messrs. Daniel Brothers; also by the President, James Abbis, Esq., J.P., Mr. Harrison, Mr. Dean, Mr. Freeman, &c. It is anticipated that the Show will be unprecedentedly large and successful. Mr. Peter McKinlay is the Hon. Secretary of the Exhibition.

AT the recent SPRING SHOW which was held at MANCHESTER, first-class certificates were awarded to Mr. B. S. Williams, Victoria Nurseries, Holloway, for *Aralia elegantissima*, Bertolonia Van Houttei, and *Cyclamen persicum* giganteum; and to Messrs. W. & G. Caldwell & Sons, Knutsford, for a new seedling *Azalea*. First-class cultural certificates were awarded to Her Majesty the Queen for a collection of Apples and Pears; to Captain Shaw, Buxton, for *Cymbidium eburneum* and *Sophranitis grandiflora*; to Mr. Joseph Broome for *Dionaea muscipula*; Mr. Leech for *Dendrobium Wardianum*; Mr. Barlow for a collection of Hyacinths; and Mr. Cooper for Chinese Primulas. The exhibition, we are informed, was a successful one.

ROSES FROM CUTTINGS—A NEW ROSE.

THAT some of the hardier Roses, as John Hopper, Général Jacqueminot, and Edward Morren, can be raised readily from cuttings I have no reason to doubt, indeed, I have proved it; but I maintain that for many years own-root Roses will not bear anything like so fine a bloom as Roses budded on the Manetti. Of course you can obtain any number of blooms on

these own-root Roses, but they are as a rule weak, thin, and altogether second-rate. I wish my Yeovil critic would sign his name; I should like to know him, as he lives within twenty-five miles of me, and is fond of the Tea Rose. He is mistaken, however, in supposing that "St. Edmund" means to force them. In the letter sent to me "St. Edmund" states that he has no glass, and asks for advice only as to outdoor culture.

I asked one of our best Rose nurserymen, a man who does nothing else but grow Roses, who is among them all day long (and night, too, I believe in the summer time), who is one of the most practical men I know (I allude to Mr. Walters of Mount Radford, Exeter), I asked him what he thought of my remarks on Roses from cuttings, and he assured me I was quite right; that the few, notably those above named, would do well enough; but that for the great majority of Roses that mode of culture is defective. However, it has the great advantage of being the most inexpensive and readiest way of propagating the queen of flowers, and so is not to be despised.

With regard to new Roses, Mr. Keynes of Salisbury intends to send out this spring a carmine or crimson Tea. This is a sport from Madame Willermoz, and is a great acquisition. I saw blooms of it last summer, and was charmed with them. The name of this novelty is Letty Coles, and if I am not much mistaken we shall see a new crimson Tea ranking in merit with Souvenir d'un Ami and Marie Van Houtte, and if so Mr. Keynes will have earned the gratitude of every rosarian in having given us this great desideratum—a good crimson Tea. Obeseunt Hybrid I hardly call a Tea; it is more of a Noisette, most valuable in every way, but yet not a crimson Tea. Fancy a grand bloom of Letty Coles between Souvenir d'Elise and Marie Van Houtte in a standard of twelve Teas. This is news to cheer up our hearts at this inclement season.—JOHN B. M. CAMM.

ASPARAGUS—CONNOVER'S COLOSSAL.

A few years' experience confirm the alleged merit or prove illusory the laudations which mark the advent of novelties. It is satisfactory alike to raiser, introducer, and grower when the novelty proves to be superior to good standard kinds, against which in practice it is sure to be pitted. Whatever favour it may have been shown prior to its passing into commerce, it is certain to receive none in a competitive trial. If there be no decidedly marked improvement in the novelty over an older kind a doubt is raised, and that is given in favour of the older kind.

Happily there is no prolonged names for varieties, if there be any, of Asparagus, which some question and others by force of fact are obliged to admit; for who will question there being Red-topped and Green-topped varieties? The difference in colour is said to be due to soil and treatment; but the two in the same bed appear year after year marvellously true to character, and do not intermix by contact as might be expected, but seedlings have the red top or the green top as the parents were. The Asparagus has retained its specific distinctness, breaking little from its originality in a cultivated state.

Varieties are due to culture, or alleged to be, in Asparagus, the giant becoming a pigmy when grown in poor soil under poor treatment, and returns to the Asparagus of the seacoast and fen, Miller considering the Asparagus growing wild in the fens of Lincolnshire to be the same as the cultivated species. I have not had an opportunity of seeing the Asparagus in a wild state in this country, and should be glad to learn if the Green-topped and Red-topped are found growing together, or if both are indigenous in the same or different localities in Great Britain. The Red-topped is alleged to be of continental (Belgian) origin, and is, so far as I have noticed, more disposed to have the stem flattened than the Green-topped, and when this form is reverted to the crowns are generally deeply covered, and the purple tint of the heads is considerably modified. I do not remember to have seen the Green-topped with a flat stem, but under high culture it rises with the head considerably thickened at its apex, having a knob-like appearance.

I have noted these peculiarities of Asparagus because the kind of American origin—Connover's Colossal—appears to be intermediate between the two—i.e., Red-topped and Green-topped, the heads rising for the most part paler in the purple tint, and some are quite green. The stems are also very round, not tending to flatness as the Red-topped, the head having quite a knob when just above ground. It has also another

characteristic of the Green-topped—growing more quickly and earlier than the Red-topped, and sooner arrives at a useable size. The characteristics of Connover's Colossal are, that the Red-topped and Green-topped are produced by the same plant—i.e., in its progeny from seed, but a majority of the plants are Red-topped, markedly paler than in the ordinary Asparagus.

So convinced am I of the great advance made in Connover's Colossal that I shall make all my new beds of it, and use the old up as soon as possible after Connover's comes into use. I am led to this from sowing seed of Connover's Colossal alongside of the older kinds and under precisely the same circumstances, and after two years' growth there were heads as large as I have out from the old variety of four years' growth. In taking-up some plants of two years' growth I find them very much finer in roots and crown—in fact, twice the size of the old variety of the same age; and four years ago I sowed Connover's Colossal, and at the same time planted one-year-old plants of the old kind, and this winter forced both, it being perhaps only proper to state that I cut a few heads of both kinds in the third and fourth year from planting in the one case and sowing in the other, and the advantage always in favour of Connover's for size.

In point of quality I have not had other than a favourable impression, Connover's being quite equal to the old kind, though less high in colour, yet quite high enough for those who like to blanch Asparagus, taking away its beauty by the absence of that which gives its flavour—namely, light and air.—G. ASSEY.

THE PHLOX AND ITS CULTURE.

THE Phlox is no exception to the general rule that whatever the florist takes in hand no effort is spared to improve the existing types. Within the last few years it is surprising with what regularity the raisers and dealers have been enabled to announce new varieties of Phloxes claiming to have superior qualifications over those that have gone before, until now we have them almost, if not quite, in perfection. The Phlox possesses qualities which place it in the front rank of florist flowers; its perfect hardiness to withstand the severest winters without injury, the simplicity of its propagation and cultivation, the exceeding beauty and diversity of colour of its flowers, most of which are delightfully fragrant, commend it to the attention of all who require a plant of easy growth for the embellishment of beds and borders; while to the amateur and cottager these plants are invaluable.

There is no mode more simple than increasing the Phlox by dividing the roots; but that is a method of propagating that I do not approve of. The plants will amply repay for the little extra trouble of striking them from cuttings by the improved flowers they will give. Many prefer striking their Phloxes in autumn; I have generally practised, however, striking them in spring when thinning the shoots of the plants. These are either inserted in pots or pricked out into a cold frame, making the cuttings in the ordinary way, and keeping moist and shaded during sunshine for a fortnight or so, when more light and air are admitted. When fairly rooted they are turned out and planted in a bed of light rich soil prepared for them, and well watered, when they soon start into growth and make strong plants by autumn. If required for pot culture they are potted in autumn into 5-inch pots; if for outdoor culture they are left in the bed till the following March, when they are put into the quarters assigned to them. Those in pots are placed in cold frames all the winter with just sufficient moisture to keep the roots in a healthy condition, and abundance of air is admitted on all favourable occasions to prevent them from starting too early into growth. When the pots are filled with roots the plants are shifted into their flowering pots in soil composed of good fibrous loam, well-decayed cow manure, and sand to keep the soil in a porous condition, the pots being well drained.

As soon as the weather is mild they are plunged out of doors in coal ashes, or whatever material may be at hand, and are sheltered from high winds, but where they will be exposed to the full sunshine. As soon as the roots have fairly taken possession of the soil I give them an abundant supply of water, with occasionally watering them with liquid manure. As the Phlox is a plant that makes great quantities of roots this is essential to preserve the foliage in perfect health, which is a matter of prime importance, seeing much of their beauty is dependant on healthy and well-developed foliage. Stake as the plants advance in growth, and when coming into flower remove to the greenhouse or conservatory, when they will amply repay for the trouble that has been bestowed on them.

Few who have not seen them can imagine the extreme beauty of a collection of Phloxes grown in pots.

Out of doors the plants will live and flower under the very worst of treatment; but to grow them well they must be liberally treated. The soil must be well trenched and rich in manure, and abundant supplies of water must be given during dry weather when they are in active growth. The shoots should be thinned to about four of the strongest, which concentrates the energies of the plant into those left. A mulching of manure over the roots is very beneficial to them, quite as much or more as it is to any other plant, seeing that the Phlox spreads its roots near the surface. Due care must be taken that they are not injured by deep hoeing close to the plant, while attention must be regularly given to keep them tied to stout stakes.

The most effective way I have ever used Phloxes out of doors was planted in lines 8 feet apart with a Pentstemon planted alternately, the dwarf habit of the Pentstemon filling-in the bottom of the taller-growing Phloxes.

I name a few varieties that are well worth growing, but seeing there are such a legion of these it is difficult to make a short selection.

Early-flowering Varieties.

Duchess of Sutherland
Eclipse
George Goodall
John Baillie
Lady Lucy Dundas
Lady Napier

Miss Belle
Rox Circle
The Shah
Warwick
The Deacon
William Sinton.

Late-flowering Varieties.

A. F. Barron
Bryan Olynpe
Dr. Masters
Eclair
L'Avenir
Lisavalli
Lothair
Madame Dommage
Madame Le Comtesse de Turenne
Madame Marie Saison

Monsieur Conrad
Monsieur de la Devanecuff
Monsieur Andry
Mrs. Dombtrain
Mannion
Premices de Bonheur
R. B. Latrd
Roi des Roses
Roi des Blanches.

—J. B. S.

ABOUT POTATOES.

UNDER this heading Mr. Fenn has contributed an entertaining and instructive chapter. There are two points in his notes which I wish to refer to—points which relate to the disease. Mr. Fenn has exploded two popular errors—theories of disease which have been persistently advanced by certain growers. Mr. Fenn proves by examples that it is not electricity that might have caused, but a few "loads of night soil shot a few years previously," that has caused the disease in his Potatoes. For "about a dozen square yards" where the manure had been "shot" in heaps there was the disease rampant amongst his seedlings, whilst beyond the highly manured radius he was "agreeably surprised to find the Potatoes nearly free from the murrain." The fact points out that heavy applications of highly stimulating manures should not be applied to the Potato ground.

The next notion which for a length of time was widely prevalent, that the "land was tired of Potatoes," and hence the murrain was generally worse in old gardens than the more lightly cropped fields. Potatoes are usually worse in old gardens than in fields, and especially if the rows and sets are too closely together, because the soil is rich in humus and moist. But that does not prove that "fresh ground" is disease-proof, nor yet "poor" ground, for Mr. Fenn narrates that he planted tubers in ground that was a "poor stonebrash" and not known to have produced a crop of Potatoes before. On such ground he thought his crop safe, but it proved to be as seriously stricken as any in the garden. Here, then, is another fact—that safety does not lie in starvation of soil.

I can confirm that fact. Some years ago some old buildings were removed that had occupied the ground for centuries. The site was planted with Potatoes, and no manure of any kind was used, and I never dug up a crop more seriously diseased; and to make the matter more strange, some sets that had been planted at the apex of a heap of manure, and not 10 yards distant from the diseased crop, turned out healthy and clean.

Sound and well-prepared soil, sound and well-prepared seed, and planting at wide distances, have enabled Mr. Fenn to obtain clean and superior crops. Those are rational modes of averting the murrain, and, what is more, they are the only rational modes that can be adopted.

Select and prepare the seed both as to sorts and character

of the sets. Do not plant trash, for trash produces trash. Do not plant sets which have been weakened by "sproutings," for weak sets produce weakly plants, and these are the first to succumb to adverse influences. Do not "smother" the ground or crowd the foliage of the plants so that it cannot perfectly perform its duties. Do not increase moisture by highly manuring, or by, what is practically the same, planting closely in naturally damp soils. Excess of moisture will precipitate the attacks of the enemy. Planting thinly on ridges in rich soil is a practice far more safe and profitable than planting thickly in hollows in poor soil. And be it understood that planting "on the level" so closely as to produce a level thicket of rampant haulm is tantamount to planting in hollows, for in effect the smothered level becomes for all practical purposes one great hollow.

Another point may be noticed, and that is that a large tuber out into two sets, each having few eyes, but these stout and prominent, will produce a crop of greater value than will two whole tubers each having many eyes, and these small and obscure.—A NORTHERN GARDENER.

NOTES FROM MY GARDEN IN 1875.

CARNATIONS AND PICOETTES.

AMONGST the florists' flowers for which I have ever had a "sneaking fondness" are these fragrant and lovely, but at the same time very troublesome flowers. Asking a brother florist once if he grew them, "I have given them up," was his reply; "for it was eleven months and a week's trouble for three weeks' enjoyment." And although this has an element of truth in it, yet as it is impossible to grow any flowers with satisfaction unless trouble is taken, I have been contented to enjoy this brief pleasure at the expense of so much trouble: and when I say with satisfaction I would repeat what I have said more than once in the controversy which my remarks have caused—that I have never grown them for exhibition, and I never sent a box to a show until last year, when I ventured to put up one of undressed flowers, which, out, I know, a very sorry figure, but it was simply an experiment which I shall not be likely to repeat unless to settle a controverted point.

To grow the Carnations and Picoettes successfully (and I would premise I am not writing for exhibitors), the plants must be grown in pots. In no other way can one so well protect their delicate blooms or have the enjoyment of their fragrance; and, moreover, for the purpose of layering no plan can compare with this. It is breakback work to layer them when grown in beds; and although you cannot by blooming them in a house secure them from the attacks of earwigs, which are deadly enemies to the blooms, yet where there is that convenience it is much better than placing them under an awning out of doors.

I am not very particular as to the size of pots, not endeavouring to arrive at uniformity, and growing sometimes one plant in an 8-inch pot, two in a 12-inch, or three in a larger pot, just as I may have pots ready, and giving more room according to the vigour of growth of the different varieties. I last year grew them in one hundred pots, and probably had about 150 plants. They were potted in March, the compost which I used being turfy loam and old hotbed manure and some sharp gritty sand, and in general in the proportion of two barrowfuls of loam to one of manure, which I find in the pure fresh air of the country to be sufficiently stimulating. I use even less manure with the higher-coloured Carnations, as it is, I believe, generally supposed that the manure causes that horrible nuisance—"running." It may be so, but I noticed last year in a few that I had over and planted in an unmanured bed that they also ran. Many of the older florists, such as Hogg, who was a most successful grower, used a much richer compost; but then they exposed it for a long time to the action of the weather, which took a good deal of the strength out of it, and I am inclined to think that the plan adopted of growing them in poorer stuff and giving them a good top-dressing will answer quite as well.

When the plants showed for bloom I removed them, as the Geraniums were over, to my greenhouse; and although I dis-budded and tied up some of the pods to prevent them from bursting, and added cards to several, yet as I did not go in for exhibiting I did not give the individual blooms that special care which perhaps more enthusiastic growers might have done. But there was nevertheless a very pretty bloom, and the plants grew well, so that I had a large surplus stock of layers—i.e., of Picoettes, for it is odd how much more difficult it is to obtain grass from Carnations. I received from the north some dozen

pairs; and what with flowers that ran and so became useless, and those that threw out no grass, I was worse off at the end of the season than at the beginning. It has been stated, and I suppose there is truth in it, that flowers after being a number of years in cultivation, deteriorate in constitution; and the more recent varieties of Carnations seem to have a much more vigorous constitution than their relative predecessors. This may be the result of youth; and although it must be taken with some exception the theory may account for facts which all growers deplore.

Into the vexed question of dressing I do not intend to enter. I have had an unusual amount of abuse heaped upon me by Mr. Dodwell in a contemporary for some statements made by me last year in the Journal. I cannot say I admire his style of controversy, although it is a perfect matter of indifference to me how abusive anyone is, for if according to the Eastern proverb, "Curses come home to roost," language such as he has used will rather injure him than me. But there is one statement which I made in the Journal which has been much misunderstood—viz., that wherein I said that these over-dressed flowers deceived the public. I never had an idea of implying anything of dishonesty in this. It is a recognised principle that these flowers may be so treated, but I think none the less the public is deceived. When Miss Tomkins's respected mamma says, "My dear, there are some very unbecoming hairs growing on your chin, and I think you ought to use a depilatory and get rid of them;" and when Miss Tomkins in obedience to her beloved parent does so, and at the next ball to which she goes her beautiful smooth skin is commented on to the said parent, I don't think she tells her friend how it is; nor do I think she did it to deceive, but merely because she thought it more becoming. So these flowers are dressed, not to deceive the public, but because they are considered to look better. None the less, however, if people think they are going to grow them like this they will find their mistake.

I will here add the names of a few varieties which did well with me last year, and most of which will be found good growers. I cannot give the list without referring to one whose name appears in it—Mr. Norman of Woolwich, and who, I see, has just passed away. I never met him to my knowledge until last year, when he told me he was suffering from a painful and incurable disease, and that he had been obliged to relinquish his cultures. He still took an interest in flowers, and was a member of the Floral Committee of the Royal Horticultural Society.

CARNATIONS.

Scarlet Bizarres.
Admiral Curzon (Kasom)
Guardman (Turner)
Lord Bancliffe (Holliday)
Mars (Hextall)
Mercury (Hextall)

Crimson Bizarres.
Eccentric Jack (Wood)
Isaac Wilkinson (Turner)
Jenny Lind (Puxley)
Lord Goderich (Gill)

Pink and Purple Bizarres.
Purity (Wood)
Sarah Payne (Ward)

Purple Flakes.
Ajax (Hextall)
Dr. Foster (Foster)
Mayor of Nottingham (Taylor)
Squire Trow (Jackson)

Scarlet Flakes.
Christopher Sly (May)
Cradley Pet (Wallis)
John Bayley (Dodwell)
Sportsman (Hedderley)
William IV. (Wilson)

Rose Flakes.
James Merryweather (Wood)
Lovely Anne (Ely)
Mrs. F. Burnaby (Turner)
Rose of Castile (Headly)

PIQUETTES.

Red-edged.
Exhibitor (Elkington)
J. B. Bryant (Ingram)
Leonora (Fellowes)
Mrs. Hornby (Turner)
Miss Turner (Taylor)
Mrs. Keynes (Fellowes)
Mrs. Norman (Norman)
William Summers (Simonsite)

Purple-edged.
Admiration (Turner)
Alliance (Fellowes)
Edith (Fellowes)
Favourite (Norman)

Purple-edged (continued).
Medina (Fellowes)
Mrs. Little (Hooper)
Norfolk Beauty (Fellowes)
Pleco (Jackson)

Rose and Scarlet-edged.
Augusta (Fellowes)
Edith Dombra (Turner)
Ethel (Fellowes)
Juliana (Turner)
Mrs. Alloroff (Turner)
Mrs. Fordham (Turner)
Purity (Payne)
Queen Victoria (Green)

—D., Deal.

ROSES ON THEIR OWN ROOTS.

As "W. G." wishes to hear the opinion of others (through the medium of the Journal), on own-root Roses, I have pleasure in stating my experience on the subject, more especially as the ground here is all chalk; and knowing that Roses do not do well on such ground without being helped with something

better, we had the ground made good with manure and other soil, and planted the Roses, some on the Briar, and some on the Manetti, and they have received every care and attention afterwards. But I am sorry to say that they have never done much good, some having died the first year. I had them made-up with own-root Roses, and they seemed to do much better, and that induces me to try more on their own roots.

I put in cuttings singly in small pots in October, and plunged them in a south border when the cold weather set in. I shook in some dry leaves about them, and sprinkled a little earth over the leaves to prevent the wind blowing them away. I took the Roses up and repotted in the same sized pots in April, and then plunged them in ashes under a cold frame, and removed the saah altogether at the end of May. I repotted them again at the end of June in 4-inch pots, plunged them in the ground fully exposed, and planted them out in September in ground well prepared for them, and there they have remained and have done exceedingly well. They were planted out in September 1872, and last year my employers told me they were the finest Roses they ever had in the garden, so that I shall not plant out any other but own-root Roses hereafter. I should like very much to hear the opinion of others on growing Roses in chalky districts.—A. W. G.

ROYAL HORTICULTURAL SOCIETY.

The following circular has been forwarded to each of the Fellows:—

THE Council of the Royal Horticultural Society, being desirous of extending a knowledge of practical horticulture, contemplate the foundation of lectures and demonstrations on the subject.

Their intention is to have lectures delivered by properly qualified instructors, in the Society's Hall at South Kensington, and to give practical instruction in the garden at Ohiswick.

These lectures and demonstrations will be open to all Fellows of the Society gratuitously; but a charge must necessarily be made for their children and friends, in order to enable the Council to engage the services of competent persons.

Before entering into engagements with instructors, and making other requisite arrangements, the Council are desirous of knowing what number of ladies and gentlemen will avail themselves of the opportunity thus afforded of acquiring a thorough practical knowledge of horticulture in all its branches.

The Council will be glad to learn as soon as possible whether or not this proposition meets with your approval, and what number of your family and friends is likely to join the classes.

The great facilities afforded by the garden at Ohiswick for carrying out these arrangements, make it desirable that as many of these lectures as possible be delivered there.

The garden is now very easy of access from all the stations of the metropolitan and district railways to the station at Turnham Green, which is within a few minutes' walk of the garden.

March 17th, 1876.

ROBERT HOGG, Secretary.

Thirty-four Fellows have been elected since the commencement of the year. Five gardeners also have been elected under the clause which admits them at half a guinea subscription annually.

LIBONIA FLORIBUNDA CULTURE.

SOME good advice has been given by two correspondents as to the merits, propagation, and culture, of this charming winter-blooming plant. They recommend pot culture all the year round, but by this method the plants never acquire that bushy healthy-looking aspect as when planted-out in the open ground during the summer months.

The plants are treated in their early stages of growth the same as detailed by your correspondents, which, by the time of digging the early Potatoes from a south border, have established themselves in 48-pots. After being hardened off a little they are planted 18 inches apart in conjunction with Solanums, Salvias, &c., the border receiving a mulching of frame manure. During the summer months the plants require liberal supplies of water, and occasionally manure water, which is essential, or they will never make presentable plants.

By the middle of September they will have grown into fine bushy plants, with foliage as green as grass and bristling with flower buds. Previously to lifting them they must be well watered. Pot them into 8 or 9-inch pots, using a compost of three parts light loam, and the other part leaf mould and decayed manure. Keep them close for a few days in a cool frame, afterwards they may be wintered with Cinerarias, Calceolarias, &c., with which they agree admirably.

One correspondent says Libonias will not bear forcing, but from that I beg to differ, as you may have them in bloom at any time during winter and spring, by placing them in gentle heat and syringing them twice a day.

One important matter I must not omit, and that is, the plants must be securely staked and tied during the summer, or you may find half of them snapped off close to the collar after a strong wind.

Can anyone give the history of this plant? The first time I saw it was in Switzerland in 1865. It was said to have been introduced into German gardens only a short time before. As to its further pedigree I could learn nothing. At all events it is a plant not yet sufficiently known, for it ought to be grown even by those who have but the smallest glass accommodation.—A. W., *Heighington, Lincoln*.

[*Libonia floribunda* was portrayed and described in *La Belgique Horticole* for 1864. It is there stated to be found in the gardens of Germany, and that it is a native of Brazil. It belongs to the natural order *Acanthaceae*.—Eds.]

OUR BORDER FLOWERS—FUMEWORTS.

THIS is a family of spring-blooming plants possessing many features that attract notice. Fumeworts succeed in most places with a small share of attention. One of their chief requirements is that the novice should keep his spade from among them when the border is being dug over. They like a sandy loam mixed with a little peat and well-decomposed dung or vegetable matter. They are at home in a moderately dry situation. Some of them may be increased by seed sown as soon as ripe, and all may be increased by division when growth has commenced. There are herbaceous and tuberous-rooted kinds as well as annual and biennial kinds. *Corydalis glauca* is a splendid annual sent out by the Horticultural Society, but I have not seen it for many years.

Corydalis claviculata is a charming plant as seen in its native localities, in boggy upland districts. *C. bulbosa*, as seen in early spring with its pleasing purplish flowers, is very attractive. *C. lutea*, often met with on old walls flowering the summer through, is a pretty border plant. *C. nobilis* is one of the best of the race. Its beautiful leaves and showy heads of flowers render it a charming plant for the rockery and border. It should be in every garden. *C. Halleri* is another fine variety of great merit. *C. lutea*, yellow, and *C. cava lutea alba*, are real gems for rockery or border, and may be turned to good account for pot culture under glass. *Corydalis eximia* is a useful border plant, but some call it *Diclytra eximia*. The whole family are worthy of far more attention than they are now receiving.—*VERITAS*.

DENBIES,

THE SEAT OF MRS. CUBITT.

FAMOUS alike for its commanding position, for the extensive glass structures in its gardens, for its good gardening, and as having been the practice ground for many years of a fine old English gardener, Mr. Drewitt, is Denbies. At an altitude of 800 feet above the sea level, and crowning a bold eminence in one of the most beautiful districts in England, the mansion is situated. From the crest of the noble hill which this seat adorns the prospect is extensive, rich, and varied. The scenery has not inaptly been compared to that of Italy; the bold undulations of the district, the rich woods, the winding streams, and picturesque residences, forming a picture of rural beauty unusually complete and imposing.

Denbies is about two miles north-west of the town of Dorking, and is approached by a sweeping road taken occasionally through deep cuttings to make the ascent more easy as it skirts the side of the hill. Within the precincts of the estate are ornamental plantations, the ground boldly rising to the left, occasional glimpses of the mansion being obtained between the trees—to the right being deep dells and the widely extending valley in which the town of Dorking nestles. On reaching the summit of the hill the visitor is compelled to pause and admire the splendid landscape which the position reveals. Towards the south is Leith Hill, its romantic summit crowned with a lofty tower. Towards the east is the town, occupying the angle of two valleys and surrounded by beautiful hills. The town is backed by the grounds of Bury Hill and the luxuriously embellished seat of Mr. Hope at Deepdene. Beechworth Castle and Box Hill are also within the line of vision. The windings of the river Mole, Burford Bridge, Mickleham,

and the woods of Norbury Park on a ridge of hills, terminate the prospect on the north; and on the north-west are situated Polstead, formerly the residence of Mr. R. B. Sheridan, and Horseley Place. Such is the commanding position of Denbies.

The mansion was originally built by Jonathan Tyers, Esq., the celebrated proprietor of Vauxhall Gardens. He resided here, and all his garden plans, it is said, were intended as contrasts to the gaiety at Vauxhall. The principal plot was a wood of eight acres, which he named "Il Penseroso," with dismal alcoves, a valley called "The Shadow of Death," and other inappropriate arrangements. These were removed by the Hon. Peter King, who purchased the estate in 1767; and it has subsequently belonged to the Whytes in 1781, and to the Denisons in 1787, from whom it passed to the wealthy and influential Cubitt family, who have effected great additions and improvements in the mansion and grounds. On the south-west side of the mansion has been raised a considerable plantation, through which are formed walks and avenues—scenes of sylvan beauty; the trees also afford necessary shelter to the gardens and residence. On the northern side of this plantation the pleasure grounds are arranged, the wood being skirted by shrubs, and at intervals rockeries and Ferns. Then comes a long and somewhat narrow expanse of lawn dotted with Conifers and flower beds; at the extremity of the grounds being a large, ornamental, and substantially built church, erected by Mr. Cubitt for the dwellers on the estate and surrounding neighbourhood.

On the lawn are several good Conifers. More than one specimen of *Cryptomeria japonica* is to be seen 30 feet in height and 12 feet in diameter at the base. *Pinus Morinda* (Smithiana) also approaches the same dimensions and is in perfect health. *Pinus Douglasii*, *pinus*, *cephalonica*, and other ornamental Conifers are in a healthy state, and being thinly planted on the lawn are very effective. As affording relief to the dark foliage of the evergreens in summer are beds of variegated Maples, having as a groundwork dwarf plants of the purple Hazel. A few flower beds are also interspersed on the lawn, not, however, occupied with bedding plants, but are more appropriately devoted to *Yuccas*, *Hydrangeas*, *Phloxes*, &c. The flower garden proper is on the terrace surrounding the mansion. This is only of limited extent, the beds being now occupied with spring-flowering plants, and in the summer are gay with *Clematises*, &c.

Looking down from the terrace, and between that and the lower windows of the mansion, are some remarkably fine specimens of *Aucubas* in tubs. These are in perfect health and colour. As area plants in town or country no shrubs are more suitable than *Aucubas*. Contiguous to the mansion and skirting the plantation are also many fine specimens of these shrubs, most of them being richly laden with scarlet berries. Male plants have been planted, from which the pollen has been distributed principally in a natural manner, but occasionally by shaking a few branches over the shrubs when in flower; and the result is most satisfactory, the crop of berries being unusually fine, imparting a rich appearance to the shrubs. These *Aucubas* are exceedingly attractive and worthy of special notice. Denbies, however, is not so remarkable for the picturesque arrangement of its pleasure grounds as for the remarkable range of glass, commencing at the mansion and extending for a distance of 1280 feet, or within 80 yards of a quarter of a mile.

We will now enter the conservatory and traverse this lengthy yet spacious crystal promenade, noting briefly, *en passant*, the size of, and prominent plants in, the several compartments. The conservatory which adjoins the mansion is 60 feet in length, 30 feet in width, and about 30 feet high. The centre consists of a large bed with a surrounding walk, and a stage next the glass containing flowering plants in pots. Noticeable amongst the climbers are *Bignonia Oliva*, *Stauntonia latifolia*, *Tasmania Van-Volxemi*, and *Cobea scandens*. On the back wall are scarlet *Geraniums*, also *Abutilons* *Boule de Neige* and *Thompsonii*. Planted in the border are *Araucaria excelsa*, *Tree Ferns*, *Camellias*, *Grevillia robusta*, *Brugmansia sanguinea*, very fine; *Acacias*, *Green Dracenas*, *Rhododendrons*, and other plants. In pots are *Azaleas*, *Epacrises*, *Mignonette*, standard *Solanums*, very effective; *Salvia Heerii*, *Cinerarias*, bulbs, &c., the structure being exceedingly gay, and the plants healthy and clean. From the conservatory we pass into corridor No. 1.

This is 70 feet long by 16 feet wide (a portion of it being shown in the engraving accompanying these notes). On the left is a narrow stage; on the right a wide border, extending from the path to the back wall. Planted in the border, and

trained up the wall, and extending to the girders overhead, are plants of *Cobea scandens variegata*, *Mandevilla suaveolens*, *Taxonia Van-Volxemii*, *Fuchsia corymbiflora*, *Habrothamnus elegans*, *Passiflora caerulea*, and *Rosa Sombreuil*. In the border also are large *Camellias*, *Azaleas*, &c. On the stage are *Euphrasies*, *Cyclamens*, *Hyacinths*, *Tulips*, and other spring-flowering plants. The next corridor is of similar dimensions. The border is occupied with large *Orange trees*; and although they have only been planted about a year they are thoroughly established, the foliage is in perfect condition, and the trees bearing a fine crop of golden fruit. At the front of the *Orange trees* is a row of *Calla aethiopica*, on the stage are flowering plants, and overhead are *Abutilons*. In connection with this division is a warm vestibule with *Bougainvillea speciosa* trained on the roof, *Ferns* planted-out in caves, a few large *Camellias* in pots, and *Citrons* trained on the wall.

At this point of the corridor and at right angles with it is a span-roofed house 50 feet long by 21 feet wide. It was formerly a *Pine stove*, but is now occupied by fine-foliaged plants, *Orchids*, &c. In this house are many fine specimens. Amongst *Orchids*, of *Dendrobies*, *Cyclogynes*, *Trichopiliis*, &c.; amongst foliage plants of *Palms*, *Marantas*, 4 feet in diameter; also *Dracenas* and *Orotons*, in good health and colour. Amongst flowering plants *Eucharises* are 4 feet in diameter, *Imantophyllums* are very fine, *Begonia nigro-rubra* effective; and very bright are *Scutellarias*, *Euphorbias*, and *Centropogons*. *Meyenia erecta alba* is also very attractive. Of *Ferns* there are many good plants, especially of *Cheilanthes elegans* and *Adiantum farleyense*. On the roof are *Stephanotes* and *Passifloras*.

We now enter the third division of the corridor. This is 150 feet in length. Planted-out and covering the wall and roof are *Gloire de Dijon* and other *Roses*, *Plumbago capensis*,



Fig. 71.—DENBIE.

Lapageria rosea, *Bignonias*, *Heliotropes*, scarlet *Geranium* *Clipper*, *Abutilons*, and *Veronica Hendersonii*. *Abutilon* *Boule de Neige* is found invaluable when planted-out for affording a continuous supply of cut flowers. On the stage are large and very fine plants of *Bollisson's Unique Pelargonium*, which are found to be of great value for the decoration of the conservatory in summer; these are well-furnished plants 4 feet high, and flower profusely many months. *Pelargonium quercifolium floribunda* is also largely cultivated, and is found to be one of the most useful of plants for summer decoration. On the stage of this corridor we noticed plants of *Alonsoa Warceowiczii*; the flowers being of unusual substance and their colour extremely rich, the spikes having been in great request during the winter for vase-decoration. Some good plants of *Coronilla glauca* also contributed brightness to this fine corridor. At right angles is another span-roofed house, 50 feet long and 18 feet wide, occupied principally with *Pelargoniums*, *Clematises*, *Cyclamens*, *Phenocomas*, *Kalosanthes*, and *Calceolarias*, which by their exuberant health would have gladdened the heart of a James or Dobson. Near this is another house of similar dimensions, used as a forcing house, and filled with *Azaleas*, *Roses*, *Deutzias*, &c., in preparation for the conservatory.

We next enter the fourth corridor, which is also 90 feet long. The roof is covered with *Clematises*, &c. There are also

standard *Laurustinuses*, and on the stages *Vallotas*, *Nerines*, *Bouvardias*, and plants which have done flowering; also a collection of *Geraniums*. In connection with the corridor are two pits for the cultivation of *Cucumbers*, *Melons*, *Kidney Beans*, &c., all the structures mentioned being heated by three saddle boilers.

We now arrive at the fruit passage. This is a narrow structure having a western aspect, and is 285 feet long by 8 feet wide. It is in three divisions—one for *Plums* of sorts, one for *Cherries*, and one for *Peaches* and *Nectarines*. The trees are trained on the wall and produce good crops of fruit. Adjoining this fruit passage is a *Peach house* 30 feet long, the trees being in fine fruiting condition, and in the same range are four *vineries*, each 34 feet long. Many of the *Vines* have been planted upwards of twenty years, and they have been annually pruned to the same spurs. The splendid *Grapes* which have been produced by these *Vines* is a matter of history, and the *Vines* do good service still in the excellent quality of their fruit. A smaller house 36 feet long was planted with late varieties five years ago, and the *Vines* are now in excellent fruiting condition. The houses are filled with *Strawberries* and plants for bedding-out, and it is evident that the garden routine which is carried out is of the first order of merit.

There are besides this splendid ranges of glass, frames sheltered by evergreen hedges, and behind the *vineries* is an

extensive range of offices, including a new fruit-room 80 feet long by 10 wide. Near this is the Mushroom house, which is used also for forcing Sea-kale and Rhubarb, the crop of Mushrooms being quite extraordinary; the Mushrooms as it were fighting each other for space on every inch of the bed.

The kitchen garden is about two acres in extent. The walls are latticed for the training of trees, and the vegetable crops are well tended. Noticeable amongst these was a Broccoli which had been selected by Mr. Druiitt, and which had passed the winter better than any other kind. The soil is a sticky clay difficult to work, and it is only by waiting for fine days that the crops can be put in at all.

On the opposite side of the park-like grounds, which are divided by Morton's wire fences, is another pleasure ground surrounded by a grass terrace, which is charming in itself and commands views of diversified beauty and extent.

Besides the church mentioned as having been erected for the neighbourhood, a dispensary is provided, and medicine and advice is procurable gratis by the inhabitants. This valuable institution is supported by Mrs. Oubitt.

The demesne is under the able supervision of G. Oubitt, Esq., M.P., whose good taste and management is everywhere seen in the excellent condition of the buildings, walks, fences, &c. The gardens are under the management of Mr. Beesley, but with that modesty usually attending merit he is anxious that whatever credit his charge exemplifies should be given first to a liberal owner, and next to his honoured predecessor, Mr. Druiitt, under whom he served for many years; but it is only right to say that owner, tutor, and pupil are to be complimented in the superior condition of this fine garden, which is so eminently worthy of public notice.—J. W.

CELERY AND ITS CULTURE.—No. 2.

HAVING detailed the mode of culture which was adopted in raising large heads for exhibition purposes, and pronounced that mode and that produce to a great extent wasteful—a waste of time, manure, and labour—I will now state how I grow Celery for everyday use. This, while a very ordinary operation, may be seasonably alluded to at the present time, when the ground is being apportioned to the several crops which are required during the season.

In a few gardens, and perhaps only a few, ground sufficient is set apart for the cultivation of vegetables on what may be termed the one-crop system—that is, there is sufficient vacant ground in spring to allot a due portion of fallow to every crop. When that is so the duties of the gardener are greatly simplified, and if he has sufficient assistance he ought to produce every crop of the greatest excellence. That, however, is an uncommon condition of things, and by far the greatest number of cultivators have to double, and more than double, crop the ground to meet the culinary requirements of the household.

When the wants of a family are considerable, and the garden (as often is the case) is disproportionately small, the most careful planning is needed, and much foresight must be exercised and correct calculations made to make "both ends meet." The manager must not only know when and what to sow and plant, but he must also know within a week when each crop will be off the ground, and have another ready to take its place. Young men especially, when entering on a charge for the first time, frequently find themselves at a loss in the kitchen garden department; and if it happens, as it has happened, that they are too "starchy" to take the advice of a sensible old labourer, they will not be on good terms with the cook for long together. I was taught, as were others who have also experienced the benefit of the teachings, to make myself thoroughly master of the art of kitchen gardening if I wished to spend a comfortable life as a gardener. My excellent tutor was fully sensible of the weak point in young men, and ever urged the importance of special study in the useful part of our duties—namely, the rotation and duration of crops. That is an important lesson to be learned by all who have not learned it.

Another matter must also be known, and that is the respective quantities of the different vegetables which are required by a family. It is no use cropping according to any fanciful, and it may be correct, theory. The only safe principle to work on is to understand the tastes and requirements of the family. This must be the keynote to which all points of practice must be subservient. When ground is scarce we cannot afford to grow a crop that is not wanted, because the almost certain corollary of that is that we fail in something which is daily in demand. There are only two ways of ascertaining the special

requirements of a family, the best of which is experience; hence it is that employers, when they find they are well supplied, do not willingly part with a certain provider, but rather and wisely grant him increased remuneration commensurate with the proved and improved value of his services. That is sound economy. But time is required to attain experience, and every young man must have a "start." In that case let him not be above inquiring of and learning from an older man, even if he is in an humbler situation than himself. Many an old garden labourer can give serviceable counsel to a young man if the latter is not above asking for it, and I do not consider it derogatory to admit that I have learned many a valuable hint in vegetable-catering to a humble garden labourer. This preamble is not incongruous with the heading of this communication, because it bears directly on the supply of Celery in a garden where ground is unusually scarce, and where the crop has to be provided by the system of forethought and calculation, which I am seeking to inculcate as prime essentials to a gardener's proficiency.

My Celery demands have always been large, and I have never had vacant ground to produce the supply—that is, like many others, I must have a crop of other vegetables from the ground before occupying it with Celery. This crop must be off the ground by the last week in June. By that time the ground which had been occupied by winter Greens and Broccoli is at liberty, but it is too far distant from the water supply, and besides, it is required for late Peas. The south border is at liberty, from which the first crops of Peas and Potatoes have been taken; but I do not consider it good practice to occupy fruit-tree borders with Celery, for by earthing there is danger of injuring the roots of the trees; and further, borders which are necessary to provide shelter to crops in the spring are equally useful in affording shelter to crops in the autumn.

My Celery must be grown in an open square, and must follow a growing crop. What about the Cabbage ground? Well, that comes in capitally for Celery, provided the Cabbages are not required for "Sprouts." My honoured chief frequently let the stumps remain for that purpose, a practice which I do not adopt. The second growth of Cabbages is tender and good, but not more tender than fresh young Coleworts, nor so likely to withstand the severity of the weather. The Cabbage ground is therefore thrown into trenches 4 feet wide and planted with Celery, and the Celery is in turn a fine preparatory crop for Onions.

But the Cabbage ground is not sufficient for the Celery, and the Potato crop is not cleared. But I require Potatoes for seed, and by taking-up every fourth row for this purpose I gain two important advantages—namely, space for the Celery, and a disease-free—aye, and almost disease-proof—stock of tubers. The Potatoes are unripe, and it is that which constitutes their special value for seed purposes. They are not at that stage stricken by the murrain; and if they were, the "resting spores" of the *Peronospora* could not well "rest" on the smooth surface of the unripe tubers, and, if they did, the tubers cast their skins during the process of taking-up and moving, and are left pure and uncontaminated. That is at least what twenty years' practice has proved, for during that time I have always had sound seed, and the constitution of the tubers has not been debilitated, for the crops are as full as ever. Thus have I found room for Celery and stole a march on the Potato disease, securing a full supply of sound seed. It is only necessary to say that manure has been dug into the vacant spaces, forming each into a natural hollow, and Celery of superior quality has always been produced.

But occasionally, or I might say frequently, the Celery ground has been previously occupied by a crop of flowers and also of Potatoes. The wide trenches have been planted with *Calceolarias* and many other flower garden plants in March, and protected with mats and canvas. Potatoes have also been planted in the trenches and similarly protected from frost. I have never had finer crops of early Potatoes than those grown in Celery trenches. The tubers are well prepared, planted early, and the growth preserved by coverings, and the crops are ready for use and removed just in time for planting the Celery. Where there are no sheltered borders that is an excellent mode of growing the first outdoor crop of Potatoes. As soon as the crop is removed the trenches must be first deluged with water and then manure be added for the Celery.

The heads by this mode of culture are not large, but quite large enough for table use. I learned from a clergyman that at the dinner tables of the affluent the smallest heads of Celery are invariably selected by the guests, and that to grow huge

heads for such a purpose is a huge mistake. If I can produce Celery perfectly blanched for a foot in length, and which is also solid and quite clear, I know I shall not be found fault with. If I grow it larger than that I must trim it down to reasonable dimensions, and I count these trimmings as so much waste. To grow Celery of the proper table size an extravagant amount of manure is not required. The soil must certainly be good, and copious supplies of water will do the rest. I find sprinklings of soot and salt to be particularly beneficial to Celery, washing it in with the waterings. Salt, however, must not be sprinkled on the foliage, or it will cause blistering; but soot may, and it will prevent blistering—the blistering by the Celery fly, *Tephritis onopordinis*—against which soot is an effectual antidote.

Waterings are supplemented by mulchings of lawn-mowings. These short grass dressings in dry weather are very beneficial, but they must not be applied thoughtlessly. If the grass is placed very thickly on the surface of the ground and round the collars of the plants, and a "dripping time" follows, it will cause the plants to decay at the neck and seriously impair the keeping properties of the Celery. I have seen entire beds ruined by this cause alone, so that even the simple matter of mulching with short grass requires to be intelligently performed.

As to the earthing of Celery, I do not agree with the work being done in dribblets. Celery will blanch as perfectly in six weeks as in six months, and the longer the soil is surrounding it, and especially in summer, the greater is the danger of grub-ravages. I tie each head with matting and remove the suckers, finding that to be not only the best but the quickest mode of earthing the plants. By deferring the earthing as long as possible sufficient supplies of water can always be given to the roots, and when that is the case bolted heads are seldom seen.

I have now only a word to add as to sorts. For the wide-trench system, and for small solid Celery of high quality, I do not hesitate to say that Turner's Incomparable White and Hood's Dwarf Red are the best varieties in cultivation. If these sorts are procured true to name no Celery can be cultivated with greater economy and which will give greater satisfaction at the table. I cannot help thinking that those who condemn these varieties have not had their seed from genuine stocks.—R. FISHER'S PUPIL.

TWO FIRST-RATE HARDY HERBACEOUS PLANTS.

Good hardy border flowers are always acceptable, and I beg to recommend the two following to all who are interested in this class of plants:—

Geum coccineum plenum.—This fine plant, which belongs to the order Rosaceæ, is a native of Chili, and resembles the Potentillas, should be in every garden where hardy plants are sought after. It grows about 2 feet high. The flowers are semi-double, large, and of a dark crimson colour, and are produced freely from early summer until autumn frosts prevent its continuing to bloom any longer. As the earliest flower stems go out of flower they should be cut away to encourage the stronger growth of the successional shoots. It is perfectly hardy; and although I cannot just now name the date of its introduction, it has not been in this country very many years.

Rudbeckia purpurea grandiflora.—This is a remarkably showy Composite, which produces large flowers of reddish purple on stems about 8 feet high, flowering in July and August, and contrasts well with the yellow *Rudbeckia Newmannii*, an old plant that has been in this country for more than fifty years. Both plants are well adapted for mixed borders or vacant places in shrubberies, and are perfectly hardy.—B.—(The Gardener.)

EXHIBITIONS OF SPRING FLOWERS.

MESSRS. VEITCH & SONS, CHELSEA.

SPRING flowers are always welcome; they are cheering by their diversified forms and varied colours, and are refreshing by their delightful perfume. At the public exhibitions they have many admirers even when arranged in formal groups, but the charms of the flowers are enhanced by their more simple and natural disposition by the growers at home. Fine as was the collection which Messrs. Veitch recently staged at South Kensington, there is little doubt that the Hyacinths,

&c., are more imposing as arranged in their nurseries at Chelsea; they are also especially convenient there for selection and comparison.

The Hyacinths are now arranged on the side stages of a span-roofed house, the central stage being occupied by hard-wooded plants, the dense greening of which brings out the colours of the flowers to advantage. On the south side the selected Hyacinths are arranged in four rows, and judging them in the aggregate a more meritorious collection has never been staged by this firm, or, indeed, it may be said, by any other growers. The difficulty is great to pick out the best spikes, and—such is their level excellence—still greater to select the worst. The new Hyacinths which were certificated last week were noticed in the report of the meeting of the Floral Committee; the selection which is now made is, therefore, confined to the best established sorts at present in cultivation.

Commencing with the Whites, La Grandesse must head the list. In every instance the spikes of it are massive and are really grand. Following it closely in merit are L'Innocence and Mont' Blanc. La Franchise has finely shaped bells; and Snowball is pure as snow, but with not large yet compact spikes. Madame Van der Hoop has large and perfect bells, and still larger are the bells of Lord Shaftesbury. Alba Superbissima is chaste and pure as ever, Baroness Van Tuyll is tall and good, Leviathan creamy, stately, and robust, and Florence Nightingale, semi-double, is very effective. The above are the best of the White varieties.

On turning to the Blues it is more difficult to make a limited selection, seeing that so many sorts possess such high merit. Amongst the dark flowers King of the Blues may, perhaps, head the list, yet it is not more effective than Argus with its rich colour and striking white eye. General Havelock, Prince William the 1st, and Marie are also fine dark varieties. Of the Light Blues the spikes are immense and the bells superior. Oscar Peter, Princess Mary of Cambridge, Blondin, Lord Byron, and Lord Derby comprise the best; and charming by their white-striped petals are Princess Beatrice and Grand Monarch. Lord Palmerston is also distinct by its bright carulean blue, but the spike is small.

We now come to the Yellow or Buff section, the best being—and these of about equal merit—Bird of Paradise, Grand Duc de Luxembourg, Ida, Obelisque, and L'Or d'Australie.

The Reds remain to be noticed, and of these Garibaldi merits the foremost place, closely followed by Prince Albert Victor, Vurbaak, Prima Donna, and Macaulay amongst the rich colours; the best of the paler sorts being Koh-i-noor, Cavaignac, Fabiola, Solfaterre, Etna, Prince of Wales, Duc de Malakoff, Pink, Charles Dickens, and the extremely delicate L'Ornement de la Nature. The above comprise the *élite* of this really fine collection, and with the Tulips, Crocuses, &c., form a display which cannot fail to be enjoyed by all visitors.

The large Camellia house is also worthy of inspection, and especially so are the Orchids. The *Phalænopsis* are in great beauty, and the display of *Odontoglossums* is unusually rich. Of these may be seen triumphants in fine form; *Lindleyanum*, *Pescatorei*, *Alexandra*, *Rossii* major, *gloriosum*, *Halli*, the new *Andersonianum*, and the rare *Ochertertonii*. *Aërides*, *Vandas*, *Dendrobis*, and *Angraecum sesquipedale* are in fine condition; while of *Masdevallias*, *Veitchii* and *Lindeni* have flowers of unusual size and brilliancy.

MESSRS. OUTBUSH & SON,

Who have hitherto provided their display at Highgate, have this year taken possession of the Alexandra Palace, where their prize plants are now on view. The plants are arranged in four semicircular rows at the front of the orchestra in the great hall, and they are worthy of the prominent position which they occupy, imparting a charming finish to the hall, and suggesting how effective is a fringe of flowers—floral foot-lights—to the orchestral platform.

A considerable number of Hyacinths here arranged are not only of superior merit but they largely consist of varieties which are moderate in price. The following are noted as superior, the selection being useful and reliable.

Blues.—Argus, rich blue and white, extremely effective. Lord Palmerston, highly distinct by its pure bright blue; the spike is of medium size, and the bells well formed and set. Louis Philippe, semi-double, very striking by the deep blue band on the porcelain petals; it has a good spike and massive bells, and is a fine variety. Garrik is another semi-double striped variety worth notice. Mimosa, General Havelock,

Feruek Khan, and Prince Albert are the best of the very dark or black-blue varieties, not, however, omitting Lord Melville with its distinct white eye. Of lighter shades—"true blues"—are King of the Blues; Marie, somewhat similar to Blue Mourant, yet superior to that good old sort—Marie is very fine in every instance, and possesses undoubted merit; Piene-man, noble bells, distinct, and fine; Leonidas, a fine spike and bells, and also attractive by the two distinct shades of lilac in the petals. Amongst the lightest of the Blues Ozar Peter, Blondin, Grand Lilas, and Lord Derby are the best varieties.

Of the Whites, Mont Blanc is uniformly vigorous and pure, and in this collection surpasses La Grandesse, which is high praise. Alba Maxima is also in noble form, and there are fine spikes of Mirandoline, Paix de l'Europe, and La Franchise; while the waxy petals and stout spikes of Seraphine and Grandeur à Merveille merit favourable notice. Snowball is fine in bells and pure but generally deficient in spike, yet notwithstanding is a fine variety.

Reds.—Duc de Malakoff, salmon; Prince of Orange, semi-double, pink, tall close spike, fine; Von Schiller, an established favourite and likely to remain so; Macaulay, very superior; Vurbaak, bright and glowing; Cosmos, very tall spike of the most delicate rose; Sir J. Paxton, semi-double, rich; but richer still is Prince Albert Victor, which is exceedingly bright, rivaling in this respect Garibaldi, which is, taking all points into consideration, perhaps the finest red Hyacinth in cultivation. The above are the best varieties now staged.

Associated with the Hyacinths are Tulips, Azaleas, and Cinerarias, relieved by a few dwarf Ferns and Palms.

Amongst Tulips the most effective varieties are Canary Bird, Cottage Maid, Joost Van Vondei, Keyzers Kroon, Molière, Pottsbakker, white and yellow; Proserpine, Rosa Mundi, Rose Luisante, Van der Neer, and Vermilion Brilliant.

The display is highly attractive, as we expect that it should be when provided by the premier prizemen of the year in the finest of spring flowers—the Hyacinth and Tulip.

NOVELTIES IN THE ROYAL GARDENS, KEW.

SINCE the appearance of our last notice a number of highly ornamental and interesting Orchids have come into flower. A fine plant of *Dendrochilum glumaceum* has about fifteen spikes of its translucent and sweetly scented flowers. Want of colour is fully compensated for by graceful habit. There are several plants of the beautiful *Dendrobium Wardianum*, which from recent large importations is now comparatively cheap. *D. Pierardi* is also a fine species, but of different habit, its pendent stems are wreathed with creamy flowers. A fine specimen of *D. densiflorum* is now one of the most striking plants of the collection, and does not fail to arrest the attention of visitors. The brilliant yellow flowers are in large and dense drooping spikes, backed with ample foliage. *D. nobile* var. *pendulum* is a fine form with larger and deeper-coloured flowers than those of the type. Other attractive kinds are *D. crassinode*, *D. superbum*, *D. infundibulum*, and *D. linguliforme*. The latter is rare in collections, though decidedly ornamental when well bloomed and covered with its pure white flowers. It is also curious from the flat tongue-like pseudobulbs, which are addressed to the block on which it grows. It is a native of Australia, and does well in the cool house. The flowers are mentioned as purple, but none of that colour have come under our notice. *Odontoglossums* are always represented, and are welcome at any season. There are now *O. Alexandrie*; *O. Rossii*, a fine form of *O. triumphans*; *O. Iave*, and *O. luteo-purpureum*. *Cattleya citrina*, *Lælia anceps* and *L. superbiens* also deserve mention.

The Conservatory is gay with a variety of forced and other flowers, many of which are not often grown for decorative purposes. *Boronia megastigma* was introduced to Kew three years ago, and may soon be widely known, being in the hands of all the chief nurserymen. It is quite unlike the other cultivated species, and is remarkable from its Heath-like foliage and sombre brown flowers. These are very profuse and have a most delicious perfume, for which alone the plant is worth attention. This with *Tinnea æthiopes*, which is much like it in scent, and *Akebia quinata*, all similar in colour, occur to us as illustrating the law, "that very brightly-coloured, or large, conspicuous, variegated flowers are seldom scented, while highly scented flowers are often inconspicuous, or, if coloured, are at least not variegated." Exceptions will, of course, suggest themselves, but illustrations may be easily

thought of among popular garden plants. It will be seen that this rule has to do with fertilisation. The very points that please our senses are also the allurements that bring insects to their food, and they at the same time are the unwitting agencies for the necessary transportation of pollen from one flower to another. *Boronia megastigma* is easily grown: it requires the ordinary greenhouse treatment, and may be increased from either seeds or cuttings.

We have just alluded to *Akebia quinata*, but a few words must be given on its own merits. Though quite hardy it is desirable for the greenhouse. Trained to the rafters it throws out slender drooping branches laden with its peculiar brown flowers and pretty foliage. It is a native of China, and there grows over the trees and hedges.

Clematis indivisa, though unlike the large-flowered and highly coloured hybrids, is equally beautiful in its way. It has dark evergreen leaves and panicles of pure white flowers in profusion, varying from 1½ to 2 inches in diameter. It is a native of New Zealand.

Myrsiphyllum asparagoides can be recommended as one of the best plants for forming wreaths and for other purposes where long slender sprays of delicate green are required. The branches may be obtained many feet in length, perfect throughout. In America it is largely grown, and is said to be used for the trimming of ladies' dresses. Just now the side branches are covered with greenish Asparagus-like flowers, but with bright red anthers, so that they are somewhat ornamental.

Some of the gorgeous Himalayan *Rhododendrons* are in flower in the Temperate house. The fiery scarlet *R. barbatum*, with curiously bearded petioles; *R. ciliatum*, *R. arboreum* var., *R. argenteum*, and *R. fulgens*.

ROSE CUTTINGS—HOW TO GROW THEM.

I WAS rather surprised to read Mr. Camm's experience of Rose cuttings, so contrary to mine, which is, however, mostly applied to plants cultivated in pots.

Having repotted all my Roses by the middle of February I place them in a cool house to bring them on gradually. They remain in this house until the second week in March, then I take them into a house in which they have to flower. They are generally in flower in May, and are one mass of bloom. When they have done blooming I select my cuttings, taking the wood that has had a bloom on it, cutting it in the usual way. I insert one cutting in a small pot, and then plunge in a gentle bottom heat, and I will guarantee that ninety out of every hundred will strike. The soil I use for striking is sandy loam, adding a little silver sand on the top of the pot when the cuttings are inserted. This prevents evaporation, which is of great importance in striking. After they have made growth 2 or 3 inches long they are repotted into larger pots, still keeping them in the same house, but without bottom heat. By the end of July they are placed in a cold frame, and remain there all the winter exposed to all the sun and light to ripen their wood. The following season they may be repotted or planted out in the rosery with success. If Mr. Camm will give his Rose cuttings another trial in the way I have laid down I am sure he will not condemn the practice of raising Roses from cuttings.

It may be interesting to Mr. Camm and other Rose growers to know that we have had Roses 6 inches across from cuttings struck the previous year, the cuttings being struck in the usual way—only allowing one stem to grow, keeping them as dwarf as possible, and not allowing them to be drawn up. The following February they are repotted into 8-inch pots, still only allowing one stem to grow up. They will generally grow about 16 inches high. At the top there will be one Rose bud, which is worth all the trouble. These placed here and there in the conservatory have a very beautiful effect. Any of the strong-growing sorts are well adapted for this style of growing. Baroness de Rothschild is one of the best sorts for this work.—JAMES POVALL.

HANGING PLANT BASKETS.

BASKETS tastefully filled with plants, and suspended from the roof of plant houses, are generally very ornamental. In lofty-roofed structures they give the place a furnished appearance. There are various sorts and sizes of baskets manufactured for the purpose. Those made with galvanised wire are the best; soil or damp makes no impression on them. Those made of common wire and painted green soon lose the

original gloss, and begin to rust. A shallow broad basket generally looks better than a narrow deep one.

During March, and not later than April, is the best time to fill the baskets. The plants have then a good chance to establish themselves before the hot summer weather sets in; and this is an advantage, as they are more liable to suffer from drought than plants in pots. The baskets always require to be lined with some kind of moss before filling in the soil. Sphagnum and other kinds of green moss generally to be found about forests are often used, and serve the purpose well enough so far; but nothing is so ornamental as some of the close-growing moss-like Lycopodiums, such as *L. apodum*, *L. scariosum*, the pretty *L. Martenii*, and many others, which can often be had in large patches; a few roots of *Panicum variegatum* mixed with these is an improvement. With such an exterior no other plant need be planted to come through the under part of the basket.

Plants in baskets should generally be of a scandent and pendant habit, but with a luxuriant undergrowth. An erect plant may be placed in the centre. The old *Begonia Rex* makes a beautiful basket plant in either a cool or hot house. It does not flower much, but the leaves are pretty; and beautiful foliage permanently is more to be desired than a brief display of flowers. Some of the finer kinds of *Agaves* are not unbecoming in a small state, and they do not suffer in the least through being hung up in a dry atmosphere. Many of the Ivy-leaved *Pelargoniums*, such as *Elegans*, *Felicity*, *Leda*, and *Butterfly*, have good basket properties. *Lonicera aurea reticulata*, *Coprosma Baueriana variegata*, *Enonymus radicans variegata*, and the superior sorts of the variegated *Ivies*, are all hardy evergreen plants well adapted for baskets. The variegated Vine, *Vitis heterophylla variegata*, is an elegant drooping plant, and so is *Lygodium scandens*. *Antirrhinum procumbens* is a common but useful plant; and the *Periwinkles* are of the same order. Many Ferns, both hardy and exotic, are suitable for baskets; *Davallia Tyermannii* is a type of them. To form a floral ball in the summer *Achimenes* are excellent. They should be started into growth in pots or pans, and transplanted into the baskets when their growth is from 1 to 2 inches in length. They should be planted over the entire basket. For a temporary display, Tulips, Crocuses, and other spring-flowering bulbs may be employed; but the most advantageous mode of filling baskets is to use some of the above-mentioned plants, or others equal to them, which remain in decorative condition throughout the whole year.

Drought is the chief thing to be guarded against in hot weather. Watering in the ordinary way is not of much avail. Each basket should be taken down and immersed in a tub of water to effectually moisten the whole concern.—J. MUIR.—(*The Gardener*.)

THE OLD MARKET GARDENS AND NURSERIES OF LONDON.—No. 8.

THE brief remarks made in a recent number by "A PLAIN GARDENER" on the application of manure have brought to my recollection the circumstance that I intended to notice in a previous paper on Mr. Middleton's account, published during the early part of the present century, relative to the system of manuring pursued in his time by London market gardeners. He does not expressly state so in as many words, but he seems to imply that to his judgment they used manure too freely in order to force as much as possible out of the ground, and also keep up a quick succession of crops. How much they used to lay on the land in the ordinary way he does not state, and something depends upon that; but as it was only usual with them to manure yearly, they could hardly be accused of too frequent an application of stimulus. Of all the manures then in demand stable litter, consisting, of course, of a mixture of decomposing straw and horse dung, was most sought after, because for its price it went farthest. Less in esteem were the street-sweepings and the contents of the cess-pools, formerly so numerous in London. Besides these the gardeners speculated in bones, coal ashes, horn shavings, leather shreds, hog's hair, "scrapings of sheep's trotters, calves' feet, and cow heels!" Soot also was largely purchased for garden grounds, but the rascally chimney-sweepers, it appears, had a practice of adulterating or weakening the article by mingling with it finely-sifted ashes and earth. A calcareous marl, dug in Enfield Chase, was also largely vended to the market gardeners north of the metropolis.

To those of us who are well acquainted with London and its

suburbs, with a population of four millions, and thousands of factories constantly polluting the air with the products of the combustion of coal and coke, it may appear ludicrous that two centuries ago, or more, people should have complained that London smoke interfered with the pursuits of the horticulturist; yet such was the case, and the worthy Master John Evelyn hurls invectives at the coal consumers of London City in his "Fumifugum." Excellent in theory, but impracticable even in his time, was his project that people generally should cease to burn coal and take to wood fires, whereby vegetation would be much advantaged; and he instances the fact that during the Civil War when Newcastle was besieged, causing the coal trade to be stopped *pro tem.*, the orchards about the Barbican produced more fruit than they had for many years before. These orchards, however, had vanished even before the great fire of London, I fancy. In speaking of the old city gardens and the men who in the sixteenth century or earlier were experimenters in plant-cultivation, I omitted to name Dr. Bulleyn, author of a curious medical and botanical treatise, and whose history would be an interesting one had time allowed the full chronicle of his doings to survive. He had a house with a plot of garden ground attached, in which he doubtless had sundry trees and plants of his own rearing somewhere near Chiswell Street, Finsbury. As the worthy doctor died in 1576 he comes in advance of the pioneer horticulturists of the Stuart period.

Resuming our consideration of the northern suburbs of London, we may note further on that Islington, the "Iseldon" of the olden time, does not seem to have had attractions for the early nurserymen, the district being principally open fields, largely devoted to cow-farming until by degrees the city in its growth during this century, invaded and absorbed them. There were some plots of garden ground, no doubt mostly owned by citizens who had country houses here, and in Charles Lamb's time there was a garden near Colebrooke Row, where he sojourned to benefit his health, and from his description of the outlook at the back of the cottage he tenanted, close to which flowed the New River, this garden, one may surmise, was a relic of some old nursery ground. He speaks of it as spacious, and mentions the Vines, Pears, Strawberries, and vegetables it yielded. And perhaps there may have been some significance in the name "Colebrooke" applied to that locality, the brook serving to supply water to the cultivators of Kale and various Cabbageworks. But this is only conjecture, and the ground is now built upon, the modern map of Islington only exhibiting one patch of nursery ground situate not far from St. Mary's, but without any circumstances of special interest connected with its history. Canonbury, it should be remembered, has its tale of a private nursery garden belonging to the Prior of St. Bartholomew. This manor belonged for many years to the monks of St. Bartholomew in Smithfield, and there were mysterious stories about passages underground connecting the two. The house having gone to ruin was rebuilt by Bolton, the last Prior, who stuck-up everywhere about the premises his punning device, a bird-bolt or arrow passed through a tun. He was great in gardening too, for he planted Figs and Mulberries, and other trees, some of which were living thirty years ago, and one or two perhaps yet survive in the smaller gardens into which the garden of the Canonbury Manor House is out up, in so far as it has escaped the builder. There were garden houses, too, attributed to him, in which he sat—not to smoke, however, for the introducer of tobacco had not yet made his appearance in the world. The worthy Prior died in 1532, but a few fragments of his house remain worked-up into modern residences.

The localities adjacent to Islington rejoicing in the names of Camden, Somers, and Kentish Towns do not call for observation, and we turn our steps towards Marylebone and the Regent's Park. It may still remain for some time a disputed point whether the former took its name from a church sacred to St. Mary "bonne," the "good Mary," or whether the appellation was "St. Mary on the Bourne," or brook, the said brook flowing from Tyburn to Westminster. The first authentic record about Marylebone Park refers to it as a large deer park belonging to the Crown. When Charles I. got into difficulties he was only too happy to find two gentlemen willing to lend money on the park, and after his death the Parliament made it over to Col. Harrison and his dragoons as an equivalent for arrears of pay. I mention this because the sale of the estate by them affords us an insight into the value of land and timber upon it in Stuart times. This park, including the whole of the Regent's Park and also land around that, extend-

ing southward almost to Oxford Street, brought £13,215, out of which sum £1774 was reckoned to be the value of the wood on the estate, and £180 was for the deer. Thus the timber was worth an eighth of the total amount, though as it was a deer park the trees could not have been crowded together. Much of the timber was soon after felled and the place disparked. But I pass on to the beginning of this century, when there was a talk about building upon the "Marylebone fields," and the Regent's Park might have been covered with houses had not the builders found difficulties from the clayey soil and the lack of water. Previous to this, however, the land situate in what we now call the Inner Circle had become the nursery of Thomas Jenkins, one of the principal London gardeners in the reign of George III. The extent of the ground, consisting of eighteen acres, did not give great scope, but this nurseryman made the best of it, and went in more particularly for American plants, and his specimens of *Rhododendrons* and of *Andromeda floribunda* attracted much notice. Mr. Jenkins generously threw open his nursery for occasional fêtes with charitable intents, and he also gave some of the residents near the privilege of the entrée at all times, out of which arose the following romance in real life, for the details of which I am indebted to the courtesy of Dr. Hogg.

There was at the commencement of this century a fashionable boarding school in the vicinity of the park, and the young ladies took their walks for exercise not unfrequently in Jenkins's nursery. Naturally they attracted some little notice there, and one damsel especially caught the affections of the nephew of the owner, a young fellow of the name of Gwydyr (or Gwyther), of Welsh descent we may presume. The circumstances gave him opportunities of showing attention in the way of the presentation of nosegays and so forth; and his love met with a response, the issue being that the young lady eloped with the gardener, and Henrietta Maria Leslie became Mrs. Gwydyr, renouncing necessarily friends and position in so doing, for her aristocratic connections would have nothing more to do with her. She had to settle down as the wife of an obscure gardener and share his humble home, which report says she did cheerfully until matters took a turn, and the death of her father in 1817 made her Countess of Rothes in her own right. Subsequently she was none the less esteemed for this early escapade, and one of her sons bore the name of Thomas Jenkins in memory of the old nurseryman.

The ground now held by the Royal Botanic Society presented in Jenkins's day a very different aspect. The buildings were not numerous, and the surface was almost level, with only a slight slope to the west. In 1840, when the Society took possession, one of the first enterprises was the throwing-up a mound, and some wiseheads suggested that the gap from which the earth was taken would make a capital lake. But others said, "Where on earth are we to get the water in a place where springs are scarce?" when, lo! there came a tremendous downpour of rain, which lasted until the newly-formed basin had a very capital supply of water to begin with. During these thirty-six years there have been many changes and improvements, and, without making invidious comparisons, it may be averred that no lover of botany can visit any garden with more certainty of being delighted and instructed.—C.

NEAPOLITAN VIOLETS.—As we write these words our room is perfumed by these Violets. They were grown by Mr. Amye, gardener at Netley Castle, near Southampton. They are very superior in size and fragrance.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

THE weather has been very changeable during the last week or two, but none of the changes have brought fine days; the wind even from the west has been piercingly cold, and has been accompanied with rain, snow, and hail, making work out of doors anything but pleasant. The wind, when there is no rain with it, soon dries up the ground and affords suitable opportunities for inserting the crops. Our early Potatoes are all planted. Carrots, Onions, Parsnips, and Celery seeds are sown. Brussels Sprouts have been sown, some of the seeds in a small bed, and others in the rows where they are intended to remain. When the seeds are sown in permanent rows a deep drill is drawn and the seeds are sown thinly, just covering them over, but not filling up the drill; this is done as the plants progress in growth.

Those who intend to plant out Asparagus must, if the ground

has not been prepared for it, trench deeply, working in plenty of rich manure. If the roots have to be brought from a distance it is best to plant them just before they start into growth, as the young growths, if started ever so little, would be injured in transmission. When the plants have to be removed from one part of the garden to another it is better to allow them to grow a few inches before planting. The plants must then be lifted carefully, placing them in a flat-bottomed basket in which they may be conveyed to the intended beds at once. There are different methods of planting them—either by drawing drills with a hoe, or by forking the ground over lightly and planting the Asparagus as the work progresses. This last system is the best. The way to proceed is this: Begin to fork over the ground at one side, then stretch a line tightly on the space that has been turned over, and with a spade cut off the soil from the line to the depth of 8 inches, making the bottom of the trench level as far as the roots extend. The plants can then be readily placed in the line and the mould forked over them. The next line to be planted in the same way. We planted ours 18 inches and 2 feet apart, but this is much wider than the usual distances. A bed may consist of four or five rows a foot apart, leaving a space of 8 feet for the alley between the beds.

We have planted Rhubarb on an early border. This is also a very gross-feeding crop, and does best on rich ground. We had the space trenched, working in the dung to a considerable depth. Seakale has also been planted, and consisted of the small seedling plants that were not large enough to be forced. Some of the roots that had been forced are also planted out, with some ashes placed round the roots of the plants, but the ground ought also to be in good condition by having been trenched or ridged in the late autumn or early winter months. Scorzoneria and Salsify ought now to be sown. Sow the seeds in drills a foot or more apart. We have sown Spinach between the rows of Peas. There is not much demand for this vegetable; a row or two at each sowing of Peas is sufficient for our purpose.

PINEAPPLES.

The house started early in January is now kept at a night temperature of 70°, with plenty of atmospheric moisture; the evaporating troughs are kept filled with water, and the house has the walls and paths sprinkled two or three times a day. This amount of moisture is necessary at present, as much heat is required from the hot-water pipes, and the winds with sunshine speedily extract moisture from the house. It is also as well to state that it is possible to have the atmosphere overcharged with moisture, and we have been advised to syringe and sprinkle walls and paths at ten o'clock at night. It may be necessary occasionally to sprinkle a little water about at that time if the atmosphere should be too dry through overheating the pipes, but it is wrong to make a practice of it. An overmoist atmosphere causes overgrown crowns. The suckers of last year have now been potted into their fruiting pots; the tan bed has been turned over, and fresh tan has been added to it. Tan is an excellent material in which to plunge the pots, but it is not superior, if equal, to Oak leaves. The plants were all moderately moist at the roots before they were repotted.

CUCUMBER HOUSE.

Here the temperature is also 70° at night. The same treatment as to atmospheric moisture is also followed as in the Pine houses. The young plants that were put out in January have made good healthy growth. They are now in fruiting condition. We are careful not to allow the wood to become too much crowded, for it checks the plants very much to cut away a large quantity of leaves with shoots at one time. When the plants have quite furnished the trellis the aim of the cultivator is to cut out all old growths a little at a time, and to substitute young vigorous bearing shoots. The Cucumber requires liberal feeding, but it may be overdone in this respect. The best treatment is to dress the surface of the beds with a compost of equal parts of loam and decayed manure, the constituent properties of it being washed into the soil with repeated waterings. Fumigate with tobacco smoke on successive evenings to destroy thrips and green fly. The leaves are very tender, and would be injured with an overdose of smoke. They will not endure sulphur fumes sufficiently strong to destroy red spider, and this pest must be dislodged by syringing.

Melons require very similar treatment, except that the compost must not be so rich. We do not add much manure to the soil in which they are planted, but the bed has a surface-dressing of decayed manure to retain the moisture in the soil as much as to nourish the plants.

Figs in Pots.—Those started in January are now making vigorous growth, and the fruit is swelling freely. The trees are very much benefited also by surface-dressings, and a little manure water as well. After the dressing is applied the roots work-up into it in a very few days, and the result of its application is soon seen in the still more vigorous growth of the trees. It is also desirable to syringe the trees once or twice daily to keep red spider at a distance. Figs will do tolerably well under the shade of Vines if the Vines are not planted too closely together; but to grow Figs well, and to have fruit of the best

flavour, it is most desirable that the trees should be near the glass and fully exposed to the sun. Some of the varieties are naturally of a compact growth, and do not require to be stopped; but the largest proportion of them require to be stopped when the young wood has made sufficient growth. The Fig will endure a temperature of 70° at night when in full growth, but 60° is better if it is not necessary to have the fruit ripe at the earliest date possible.

GREENHOUSE AND CONSERVATORY.

There is always some difficulty with us at this season as to the few hardwooded plants that we grow for summer flowering. It is necessary to shade the houses as much as possible in order to prolong the bloom of Hyacinths, Tulips, and all other spring-flowering plants; and to make a good display the plants are crowded together closer than they ought to be. We can manage small plants very well, but have nowhere but the conservatory in which to place them after attaining a certain size. We mention this because a gentleman who was shown through our houses recently complained that his gardener could not grow certain plants that were flourishing with us, such as *Hedera tulipifera*, *Pimelea spectabilis*, *Hovea Celsii*, &c. Now, all the above and many more valuable hardwooded plants must be placed where they have light and air, and they must not be crowded with softwooded plants. *Daphne indica* in variety succeeds well if grown in the shade; we have it covered with flowers annually, and it is never removed from the greenhouse.

Azaleas make a very fine show. At present we have only forced the smallest plants; the older plants have not yet shown signs of growth. They will flower from the end of May up to the middle of July, and even later if the latest-flowering sorts can be removed to a house with a north aspect. The plants intended for late flowering have air freely admitted, but during the recent gales of wind it has been necessary to act with caution.

The earliest-flowering plants of stage *Pelargoniums* are now showing their flower trusses. The plants were potted late this season in moderately rich material. The pots are not very full of roots, so we have not applied any manure water. This ought not to be used unless the pots are well filled with roots. An over-luxuriant growth in *Pelargoniums* is very undesirable, as the flowers on such plants are neither so plentiful nor of such good quality as those produced by plants of moderate growth.

Hyacinths and Tulips are supplied with manure water until the flowers begin to open, when it is discontinued. Cinerarias are flowering very beautifully with us this season. A pinch of seed was sown about April last year, and a number of really fine flowers have been produced. At one time we used to work very much with named sorts, but it was difficult to keep the plants in good condition all through the season, and it is very interesting to watch the seedling flowers open. The plants are grown freely all through the summer months, and if they have done well will be in 9-inch pots by September. If it is intended to exhibit them the centre growth must be pinched out early and the side growths be tied down, so that the plants may be of a dwarf habit.

We have turned the Cape Heaths out into a cold pit, as they will not be injured by the frost we are likely to have after this. It is necessary to throw a mat over the glass, as the plants are not far removed from it. Some mildew had appeared on the growths before they were removed from the house; but some flowers of sulphur were dusted on the affected parts and the parasite has not appeared since.

Now is the time to destroy all insect pests by fumigating. Camellias had become infested with red spider, which was turning the leaves brown. Washing it off with a sponge and soapy water is the best way to destroy it, or if this is not practicable it must be washed off by syringing; but this cannot be done while the plants are in flower.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

GLASGOW. March 29th, May 10th, and September 12th and 18th. Mr. F. Glib. Doughty, 167, Canning Street, Sec.
ROYAL CALLEDONIAN HORTICULTURAL SOCIETY. Shows April 5th, July 5th, and September 18th.
WESTMINSTER AQUARIUM. April 12th and 18th, May 10th and 11th, May 30th and 31st, July 5th and 6th.
CRYSTAL PALACE, Flower. May 19th and 20th. Rose, June 16th and 17th.
TIVERTON. May 24th and 25th. Messrs. A. Payne and J. Mills, Hon. Secs.
MANCHESTER (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.
SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Faldge, 89, York Street, Sec.
SOUTH ESSEX (LEYTON?). June 18th. Mr. G. E. Cox, Wilmet Road, Leyton, Sec.
COVENTRY. June 19th. Mr. T. Wilson, 8, Portland Terrace, Sec.
MAIDSTONE (ROSES). June 21st. Mr. Habert Bensted, Royston, Maidstone Sec.
FARNHAM AND SOUTH HAMPSHIRE. June 21st. Mr. H. Smith, Sec.
SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.

EXETER (ROSES). June 23rd. Mr. T. W. Gray, Hon. Sec.
BRIGGATE (ROSES). June 24th. Mr. J. Payne, Treasurer.
LEADS. June 26th, 29th, and 30th. Mr. James Birkbeck, Delph Lane, Woodhouse, Leeds, Sec.
RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.
FARNHAM (ROSES). June 29th. Mr. A. R. Bally, Hon. Sec.
MARSBRIDGE. July 1st. Mr. J. H. Edmondson, Hon. Sec.
SOUTHERN. July 5th, 6th, and 8th. Mr. E. McLean, Sec.
HELMSBURG (ROSES). July 15th and 18th. Mr. J. Mitchell, Sec.
WIMBORNE. July 18th and 18th. Mr. F. Appleby, 6, Linden Cottages Hon. Sec.
KILMARNOCK. Roses, July 18th and 19th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.
TOKBRIDGE. July 13th. Mr. W. Blair, Hon. Sec.
BRIGHOUSE. July 29th. Messrs. C. Jessop & E. Rawnsley, Hon. Secs.
HEWORTH (Horticultural). August 2nd. Mr. B. H. Falco, Hon. Sec.
CLAY CROSS. August 15th. Mr. J. Stallard, Clay Cross, near Chesterfield, Sec.
WESTON-SUPER-MARE. August 15th and 16th. Mr. W. B. Frampton, Sec.
FARNSTON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.
SHERWESBURY. August 16th and 17th. Admits & Naunton, Hon. Sec.
TAUNTON DEANS. August 17th. Mr. F. H. Woodford, M.D., and Mr. Clement Smith, Hon. Secs.
MIRFIELD HORTICULTURAL. August 19th. Mr. George Senior and Mr. John Rushforth, Hon. Secs. (stairs, Sec.
RAMSGATE (ISLE OF THANET). August 23rd. Mr. B. R. Schartan, Broad-Sutton Burn, August 26th. Mr. B. Richardson and Mr. W. Elliott, Secs.
DUNDEE (International). September 7th, 8th, and 9th. Mr. W. E. McKelvie, 26, Euclid Crescent, Sec.

TRADE CATALOGUES RECEIVED.

Waite, Burnell, Huggins, & Co., 79, Southwark Street, London.—*Catalogue of Agricultural Seeds, &c.*
Thomas S. Ware, Hale Farm Nurseries, Tottenham, London.—*Illustrated Catalogue of New and Rare Hardy Perennials, &c.*
William Potten, The Nurseries, Sissinghurst, Kent.—*Select List of Geraniums and other Bedding Plants.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (F. W. H.).—W. Paul's "Rose Garden" may be obtained through any bookseller.

POTATO PLANTING (J. S. J.).—Have the rows 3 feet apart, and the sets 2 feet apart in the rows. Snowflake is a second early. Our correspondent says that in his neighbourhood a late and remarkably good variety is grown called the Devonshire Kidney. He wishes to know if it has another name.

GOLDEN AND SILVER BEDDING PELARGONIUMS (S. G. M.).—Prince Arthur, Mrs. Batters, Bright Star, Prince Silverings, and May Queen. Harold is a golden bronze.

WOODEN PAINTING FOR FRUIT TREES (A. C.).—Paint it any colour you like, we should select stone colour. Dark colours would render the palling warmer by day but colder by night than light colours.

POTATOES RIDGE-PLANTED (H. N.).—Mr. Fenn has stated the mode of planting in our last number.

FOWL AND PIG DUNG (Mrs. C. E.).—The fresher they are the more desirable to be dug into the ground. Neither would be of any use in the seasons of fruiting Strawberries.

STOPPING VINES (E. R. York).—The idea of stopping the shoot from the lowest eye at the first leaf is not new, and one we do not advise you to follow, for the shoot from the uppermost eye from its greater length and more leaves will attract the sap from the lowest shoot with but one leaf, and the latter will not form any better eye at the base of the leaf to which the shoot is stopped than were you to allow it to make six leaves and then take off its point. We should allow both shoots to grow until you can ascertain which shoot is fruitful, or it may be both the shoots show fruit. If to remove the upper shoot, or if the upper shoot only show fruit remove the lower shoot, retaining only a fruitful shoot from each spur; but if no fruit shows on either shoot remove the upper shoot and stop at the sixth leaf, and fruitful shoots one or two joints beyond the bunch. You may, of course, leave a fruitful and an unfruitful shoot upon a spur if you have space for the full exposure of the leaves to light and air, but one shoot in most instances is ample.

GRAFTING WAX HARDENED (F. J.).—The receipt is the same as that given by us for making grafting wax not requiring to be applied warm. It ought not to be applied hotter than the hand can bear. It is to be applied over the tying material so as to exclude air from the junction. You used the wrong kind of turpentine.

CULTURE OF PEACH TREES AND PYRAMID PEARS AND APPLES (A. Dublin Subscriber).—The Peach trees must be pruned at once. Shorten the young wood from half to one-third of its length, cut the one-third off those trees that have made the strongest growth. As your pyramid trees were planted in November they will now be well established. We would not cut more than one-third off the young wood of them either, it would depend much upon the state of the roots at the time of planting, some trees are sent home with strong-grown young wood and but little root. These must be cut back closer.

VARIOUS (Donna Serafina).—The Onifer cannot be identified unless a

cone is sent with a spray. Scrape off the lichens and paint the stems of the trees afterwards with a creamy mixture of lime and salt in water, soot being added to prevent the whiteness being objectionable. Silver-margined English Ivy is the whitest we know.

HOLLYHOCK CULTURE (A. S.).—Your remedy is to raise young plants annually by striking the cuttings in spring in gentle heat, or from eyes inserted under handlights in the summer, wintering the plants in cold frames. Hollyhocks like an open situation exposed to the full sun, and require to have plenty of air, but to be sheltered from cutting winds by objects at such a distance that they will not shade nor affect the Hollyhocks. The ground should be a good rich loam, light rather than heavy, enriched with plenty of manure; it must be trenched, manured, and thrown-up roughly in November, and turned over in frosty weather. Of course, it must be well drained. If the ground is heavy add sand or ashes to the soil. If it is in good order you may plant out with every confidence early in April. The plants should have protection from frost for a short time. Beyond staking, and supplying them liberally with liquid manure, we do not find they need any further care, only to reduce the shoots thrown-up to two, or at most three, of the strongest.

FERN UNHEALTHY (S. E. H.).—*Adiantum farleyense* occasionally loses some of its lower fronds in the winter, but new fronds are quickly produced in the spring. The plant may require fresh soil, but do not overpot it. Remove carefully some of the old soil from the roots and apply a fresh compost of turfy peat two-thirds, the remaining third to consist of turfy loam, lumps of charcoal, and silver sand. Use the compost in a rough state, and place the plant in the stove, shading it and affording a moist still atmosphere. The sprig having a light blue flower was much withered. We think it is *Goldfussia anisophylla*, a plant of easy culture requiring cool stove treatment. Pot it in peat and loam, keeping in the stove until June, then remove it to the greenhouse or frame, replacing it in the stove in September.

SHEDDING APPLIES ON THEIR OWN ROOTS (J. H.).—Many have fruited so grown, but grafts from them fruit much sooner. You can have the Index and probably the numbers.

CONVERTING PIT INTO HOTHOUSE (H. T.).—We should discard the fine altogether and heat with hot water. The wall-plates may be utilised for the same purpose again. We should employ them for the proposed house of which we give a section (Fig. 72), also the old lights, having others made of the same length and so form a span-roof house, which will give you a house of

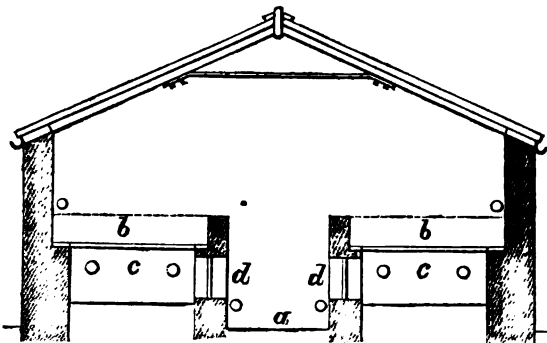


Fig. 72.

about 11 feet in width inside the walls. a, Pathway in centre. b, Beds over heated chambers. c, The beds filled with coals-nut fibre refuse for plunging the pots in, c being flagged over and heated by two rows of 8-inch pipes, having sliding doors in the side walls d at 4 feet intervals, they being about a foot square, by which any excess of bottom heat may be liberated, or if required to augment the top heat it may be done by means of the slides. Top heat is had by a 4-inch flow pipe all round the house except the doorway, the return being in the pathway. We give the section in hopes of its being useful to you and others of our readers. It is a useful kind of house for the growth of dwarf plants employed for house decoration, and a capital supplement of a greenhouse when plants requiring a higher temperature are in demand, besides being useful for propagating.

SELECT PLANTS (An Inquirer).—*Chrysanthemums*: Barbara, White Beverly, Empress of India, Golden Beverly, Lord Derby, and Venus. *Fuchsias*, single varieties: Arabella Improved, Barcelona, Delight, Grande Duchesse, Marie, Right Hon. J. Bright, and Tricoloured Beauty. *Double varieties*: Avalanche (white corolla variety), Chicago, Princess Alexandra, Purple Prince, Sir Garnet Wolseley, and White Unique. *Show Pelargoniums*: Black Prince, Chieftain, Duchess, Favourite, Magnificent, Scottish Chieftain, and Zephyr. *Zonal Pelargoniums*: Avocat Gambetta, Edward Bennett, Sir Charles Napier, White Clipper, Princess Maud, and Florence Dundee. *Nosegay Pelargoniums*: Delight, Pink Queen, Lustrous, Rose Bradwardine, Violet Hill Nosegay, and George Peabody. *Tricolor Pelargoniums*: J. B. Downie, Achievement, Jetty Lacy, Prince of Wales, Mrs. Laing, and Miss Burdett Goutte. *Bronze and Gold*: Chieftain, Prince Arthur, W. E. Gumbleton, Marshal MacMahon, Rev. C. P. Peach, and Black Douglas. *Gold and Silver-edged*: Crystal Palace Gem, Golden Chain, Albion's Cliffs, Bonnie Dundee, May Queen, and Mrs. Kingsbury. *Colours*: Albert Victor, Duke of Edinburgh, Baroness Rothschild, Prince Arthur, Prince of Wales, and Queen Victoria.

CUCUMBERS FAILING (H. A. B.).—Probably the bottom heat is excessive and the night temperature too high. We should keep the bottom heat steady at 75°; the top heat 85° at night, and it may fall to 60° in the morning, 75° by day without sun, and 80° to 85° and 90° with sun and air. The cucumber you name succeeds admirably with bottom heat, but having a hardy constitution succeeds with less bottom heat than probably any other kind, and is one of the most useful kinds in cultivation. Telegraph will endure stronger bottom heat than any kind we know, and also a drier atmosphere. Try Tender and True. It has a good constitution, is a certain sweeter; it and the one you have being the tenderest and finest-flavoured of Cucumbers.

NAMES OF FRUITS (A. M.).—Apples: 1, Loam's Pearmain; 2, Paradise Pippin; 4, Norfolk Storing. Pear: Passe Colmar.

NAMES OF PLANTS (S. O. C.).—*Spermannia africana*. (*Somerset*).—1, Pinus

excoelsa; 2, *Asplenium bulbiferum*; 3, *A. Adiantum nigrum*; 4 and 5, *Laetia spinulosa*. (J. W. A.).—*Milla* (*Triteleia*) *uniflora*, Graham. (Jas Brown).—8, *Aspidium falcatum*; 4, *Asorus gramineus*; 5, *Adiantum affine*; 6, *Asplenium auritum*; 9, *Brickellia cordifolia*.

POULTRY, BEE, AND PIGEON CHRONICLE.

SILKIES.

By REGINALD S. S. WOODGATE.

PART 4.

SILKIES when hatched should be quite yellow, and we have often noticed that the yellower the down is on them the better colour do they eventually come; chicks which are hatched white being often bad in colour when full grown. They are the hardest little chickens imaginable. We have broods now which have never been coddled, and which are feathering fast. They will eat anything, and do not need ousters or bread-and-milk, and such expensive fare; in fact, for hardihood they surpass all the breeds we know of bar none in their days of chickenhood. Their good qualities as mothers and sisters are being rapidly realised by game-keepers, for we hear of Pheasant breeders and rears clamouring for hens and pullets of the breed on all sides. As we have before stated, one great virtue is that they are so often broody, and so their eggs are not so much valuable as the birds themselves. They rarely lay a dozen eggs before wanting to sit, and this is as equally noticeable in the first cross between a Silky cock and common or Game hens as in purely bred specimens. This would be in many breeds a great disadvantage, but when the breed is cultivated, especially for sitting purposes, it is the greatest boon. When a hen or pullet begins to lay we may generally feel sure that by that day fortnight the bird will want to sit, while in a hen of another breed it is impossible to judge when the desire will come on. When, however, they are put aside and not allowed to incubate, a day or two in a strange place will stop the tendency, and they will lay again in ten days, and often before the week is out. Now, this is a valuable point to know, and we confidently recommend the poultry world generally who are in this season clamorous for broody hens to give up a small yard for a tribe of Silky hens, or the first cross between a Silky cock and some small common hens. Of course they need not be perfect in points for this purpose, but the number of imperfect Silkies is becoming limited—that is, of Silkies imperfect in comb, or claws, or feathering. We never have more than one or two imperfect chickens now in a whole season. We had troubles at first, as of course all will have, and do have, but we killed as soon as they were hatched all which had one single disqualification, such as a single comb, or only four toes, or non-feathered legs, and so we brought our birds to the standard as now required in the exhibition pen. Of course by so doing we destroyed at first pullets with the cockerels which were not perfect, and which still would have done for sitting purposes, but we preferred to get our breed established and our chickens always perfect; and this we recommend all to do also if they want to establish for themselves a strain which will always breed true to the required points. We may mention too that in making-up for exhibition especial care has to be taken with regard to the combs. So many of our best specimens are red in comb, or dark in comb and red in wattles. This becomes worse every breeding season, and we would recommend a cock being used with a badly-shaped comb of a good colour before a perfectly-shaped-combed one of a bad colour. We detected last season at one show an otherwise good bird with a reddish comb, but the owner had tried to get over the blemish by using some chemical to alter the objectionable colour, but it hardly had the desired effect, as when we saw it the acid, or whatever the compound was, had changed colour and become of a bronze hue. We mention this in passing to show that even the innocent and useful little Silky is "doctored" or tried to be "made-up" for show. We know of no paint or acid which could possibly make a bad comb in a Silky of a good colour, and so we venture to suggest that even the "fakers" should not think of touching a Silky's comb, unless they wished for and coveted detection and disqualification.

Since we wrote our last paper we have heard from a gentleman who has kept the breed for many years, and he tells us that he too has experienced the giddiness and vertigo in the breed which we mentioned, and has used with temporary success doses of spirits of lavender as a remedy. We say temporary, because we hear the ailment returns again after two or three months; still, as we previously said, we have never found in an otherwise perfectly healthy specimen that this peculiarity has injured the breeding powers of the birds.

In leaving the subject we can only express our hope that the breed will gain its deserts more in this season than in bygone years, and that other places besides Bath and Oxford and the two Palaces will support this, one of the most useful breeds we have, by giving it classes; and for ourselves, we take this opportunity of stating that we will guarantee four entries in every

years, at least in these parts; but hope must not be surrendered. Therefore let warmth and feeding be encouraged as much as possible in every apiary.—B. & W.

SUPERSTITIONS RELATIVE TO BEES.

SEIZING in your "Letter Box" reply that you consider none but the ignorant entertain such superstitions, I write to say that persons far from being ignorant in Essex will not sell a hive of bees, believing that if they did the bees remaining in their apiary would dwindle away. I should like to know what other superstitions are relating to bees.—LANGFORD.

[We extract the following from Brand's "Antiquities." "A gentleman at a dinner table happened to mention that he was surprised, on the death of a relative, by his servant inquiring whether his master would inform the bees of the event, or whether he should do so. On asking the meaning of so strange a question, the servant assured him that bees ought always to be informed of a death in a family, or they would resent the neglect by deserting the hive. This gentleman resides in the Isle of Ely, and the anecdote was told in Suffolk; and one of the party present, a few days afterwards took the opportunity of testing the prevalence of this strange notion, by inquiring of a cottager who had lately lost a relative and happened to complain of the loss of her bees, whether she had told them all she ought to do. She immediately replied, 'Oh, yes; when my aunt died I told every skep (i.e., hive) myself, and put them into mourning.' I have since ascertained the existence of the same superstition in Cornwall, Devonshire, Gloucestershire (where I have seen black crape put round the hive or on a small stick by its side), and Yorkshire. There are many other singular notions afloat as to these insects. In Oxfordshire I was told that if man and wife quarrelled the bees would leave them.

"In the Living Librarian, Englished by John Mollo, 1631, page 383, we read, 'Who would believe without superstition (if experience did not make it credible), that most commonly all the bees die in their hives if the master or mistress of the house chance to die, except the hives be presently removed into some other place? And yet I know this hath hapned to folke no way stained with superstition.' A vulgar prejudice prevails in many places of England that, when bees remove or go away from their hives, the owner of them will die soon after.

"A clergyman in Devonshire informed me that when any Devonian makes a purchase of bees the payment is never made in money, but in things (corn for instance) to the value of the sum agreed upon; and the bees are never removed but on a Good Friday.

"A superstitious custom prevails at every funeral in Devonshire of turning round the bee hives that belonged to the deceased, if he had any, and that at the moment the corpse is carrying out of the house.

"Samson, in his Statistical Survey of the County of London-derry, 1602, page 486, says that there bees must not be given away, but sold; otherwise neither the giver nor the taker will have luck."

"Borlase in his 'Antiquities of Cornwall,' page 168, tells us, 'The Cornish to this day invoke the spirit Brownyn when their bees swarm; and think that their crying Brownyn, Brownyn, will prevent their returning into their former hive, and make them pitch and form a new colony.'"]

OUR LETTER BOX.

OBTAINING EGGS (*Agamemnon*).—The variety is of more effect than the feeding. Golden Hamburg pullets fed liberally on ground oats and barley-m meal will produce eggs as early and frequently as any other breed.

BEES DROPPING THEIR EGGS (*E. M.*).—It is probable you will induce them to lay in a nest if you provide one. It should be a square box put in a corner of the roosting house, well supplied with straw, and having two or three artificial eggs to show for what purpose it is intended. It wants nothing in the way of concealment, and the sides should not be more than 7 or 8 inches high. It is from the eggs lying about that they take to eat them. One gets broken, and then birds that never dreamt of eating an egg greedily devour the yolk. It is very difficult to cure the habit. One thing that helps much to do it is to put some hard composition eggs on the floor of the house. The culprits try once and again to make an impression on them, and failing give it up. They will also eat eggs lying about when they will not touch one laid in a nest. These complaints sometimes arise from laying-boxes closely resembling pigeon-holes, and placed 8 feet from the ground.

GOLD-PENCILLED HAMBURG'S POINTS (*Bosco*).—Both cock and hen should have faultless white deaf ears not exceeding the size of a fourpenny-piece, combs full of spikes seated firmly on the centre of the head, and piked behind, the pike inclining upwards. The cock should have a black tail for ground colour, but the feathers should be bronzed on the sides. Both should have taper blue legs. The hen's plumage should be accurately pencilled all over; each feather should have eight or ten dark markings. The tail should be pencilled to the end, and the hackles as free as possible from spots. You need not be discouraged if you do not positively attain these last conditions; they are difficulties, and as a rule pencilled tails bring spotted hackles. The colour of both sexes should be rich and not washed out. It is a grave fault if the pencilling is not defined but runs into masses and becomes that which is called "mousy."

DUCKS DYING SUDDENLY (*J. B. J.*).—We have carefully dissected the Duck you sent. We find it healthy with the exception of the heart and liver. The former most unnaturally distended and full of blood. The liver enlarged and also full of blood. This latter appearance is indicative of improper food. We attribute it to the rice. Give your Ducks oats to eat, feed them from some vessel in which you can put oats, gravel, and soda of grass. Cover the whole with water, and let them feed from it. They will not then, we think, have any similar disease.

CANARY DYING SUDDENLY (*Mrs. T.*).—There was no organic disease. Sudden exposure to cold may have been the cause this severe season.

ZEBRA FINCHES (*R. S. U.*).—Waxbills, of which there are several varieties, are very common to each other, setting aside the sexes of the birds, even though when more than one or more pairs are kept together in a cage. Waxbills apparently appear more at home when provided with a residence furnished in the interior of a rustic as regards perches, and the backs and corners of the cage fitted up with suitable crooked stumps, partly faced-up with bark (cork bark may be fashioned to any degree the fancy may lead), with small inlets or holes here and there provided, and a kind of corridor communication from end to end of the cage. In the corners of the cage fix small receptacles to serve as nesting places, but not put-up in a too-much artificial style, with no French polish about them. Let them be rugged, but securely fixed. When commencing to try to breed with the birds supply them with moss and hair, with a little fine hay or dry fibrous material, such as may be obtained from the roots of small fruit trees. A cage with wooden sides and back will be best for the purpose, with an open door or slide constructed at each end to place in or take out the nest, or to peep as occasion may require at the progress (if any) the birds may make. The entire matter will be interesting; and even though success may not favour you, still that which you may have to contend with in the way of disappointment will be made up for in experience. Then (so far as your individual case may be concerned) you will be able to test whether "Zebra Finches will breed in England." We do not wish to discourage you, but urge you on with your interesting task. We cannot just now refer you to facts, proof positive, as to whether they will breed, but we have heard of several instances of Waxbills depositing eggs in their cages. We know of other foreign birds having bred in this country, successfully too, in cages and rooms. Waxbills, like other finches, mostly feed upon seeds, and that most suitable for these particular birds is millet seed. This they eat with avidity where they inhabit. In the way of soft food (if you should succeed in breeding with your Waxbills) you may supply them with chopped egg mixed with a little boiled rice or bread slightly soaked in new milk, but let it be fresh daily. Birds which feed upon seeds send their young from the crop.

METEOROLOGICAL OBSERVATIONS.

GARDEN SQUARE, LONDON.

Lat. 51° 28' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.						Rain.
1878.	Barom. at top and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.				
March.		Dry.	Wet.			Max.	Min.	In sun.	On grass			
We. 15	Inches.	deg.			deg.	deg.	deg.	deg.	deg.	deg.	In.	
Th. 16	29.247	43.0	40.0	W.	41.5	33.5	40.9	37.8	40.3	—		
Fri. 17	29.204	42.0	38.3	W.	41.5	34.8	38.8	36.1	37.7	—		
Sat. 18	29.267	37.9	32.1	N.W.	39.8	44.1	33.1	36.5	36.1	—		
Sun. 19	29.284	36.9	31.0	N.	39.3	44.8	30.0	37.5	34.6	0.040		
Mon. 20	29.280	30.4	30.1	N.	37.8	36.1	27.0	74.9	19.3	0.080		
Tu. 21	30.049	23.5	31.6	N.	37.0	40.3	35.8	36.0	21.4	0.019		
	29.284	31.5	30.0	E.	37.3	37.4	37.1	44.8	21.4	0.199		
Means	29.271	33.1	33.6		39.0	43.1	31.3	34.4	26.8	0.190		

REMARKS.

- 15th.—High wind in the night, and continuing, though not so violent, all the day, which was otherwise fair and bright.
 16th.—Very fine morning, with rapidly rising barometer; fine day, but cold; a few flakes of snow about 1 P.M.
 17th.—Fine, but getting colder; very bright at noon; but a slight fall of snow about 2 P.M.; fine after, and a starlight night.
 18th.—Fine and bright but windy and cold; very dark at 4.30 P.M., and a slight snow shower; very cold at night.
 19th.—Snow 1½ inch deep on the ground, and still snowing at 9 A.M., and more or less till noon; then cleared off, and was very bright all the afternoon; a few flakes of snow again at 9 P.M.
 20th.—Fine but cold morning, and till about 1 P.M.; snow in the afternoon and evening, and very cold.
 21st.—Very fine early, but getting darker, so that at 9 o'clock it was intensely dark, not exactly from fog, as things could be seen at some distance, but from the colour of the medium through which you looked.
 A sharp wintry week with much wind and snow.—G. J. SYMONS.

COVENT GARDEN MARKET.—MARCH 22.

A VERY quiet business doing in all kinds of goods, and with the exception of late Grapes, which are becoming very short, prices have a downward tendency.

FRUIT.

	s.	d.	s. d.		s.	d.	s. d.
Apples.....	1	0	0	0	Mulberries.....	lb.	0 0 0 0
Apricots.....	dozen	0	0	0	Nectarines.....	dozen	0 0 0 0
Cherries.....	lb.	0	0	0	Oranges.....	dozen	0 0 0 0
Chestnuts.....	bushel	12	0	0	Peaches.....	dozen	0 0 0 0
Currants.....	dozen	0	0	0	Pears, kitchen.....	dozen	0 0 0 0
Black.....	do.	0	0	0	Pears, dessert.....	dozen	0 0 0 0
Figs.....	dozen	0	0	0	Pine Apples.....	lb.	1 0 0 0
Filberts.....	lb.	6	0	0	Piums.....	dozen	0 0 0 0
Gobs.....	lb.	0	0	0	Quinces.....	bushel	0 0 0 0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0 0 0 0
Grapes, hothouse.....	lb.	0	0	0	Strawberries.....	do.	1 0 0 0
Lemons.....	dozen	0	0	0	Walnuts.....	dozen	0 0 0 0
Melons.....	each	0	0	0	ditto.....	dozen	0 0 0 0

WEEKLY CALENDAR.

Day of Month	Day of Week	MARCH 30—APRIL 5, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock before Sun.		Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.			
30	Tu	Royal Society at 8.30 P.M.	52.7	34.3	44.0	5 41	6 38	7 19	8 5	1 23	6	4 24	90					
31	F	Royal Institution at 8 P.M.	55.3	38.9	44.6	5 38	6 30	8 5	1 23	6	4 24	91						
1	S		55.0	34.4	44.7	5 36	6 31	9 9	2 29	7	8 48	92						
2	Su	5 SUNDAY IN LEWT.	57.8	36.7	46.9	5 34	6 33	10 29	8 17	8	8 30	93						
3	M	London Institution at 5 P.M.	57.1	35.7	46.4	5 33	6 35	11 57	8 50	9	8 12	94						
4	Tu		56.7	35.7	46.3	5 29	6 36	1 24	4 13	10	2 54	95						
5	W	Royal Horticultural Society—Fruit and Floral Committee at 11 A.M.	57.0	35.7	46.0	5 27	6 38	2 48	4 28	11	2 56	96						

From observations taken near London during forty-three years, the average day temperature of the week is 56.1°; and its night temperature 35.7°.

SOIL FOR RHODODENDRONS.



NO genus of plants that I am aware of has had more conflicting remarks made on its culture than the Rhododendron. In my younger days peat was thought indispensable, and to try the plants without it was supposed to be something like trying to keep fish alive without water. Eventually fresh ideas were formed, and it was found that failures in Rhododendron culture were caused even by the peat itself—a certain kind of which has to my knowledge done more harm to the Rhododendron than has any other soil, for it has been known to kill it outright. But accident, or rather the unexpected result of some experiment in planting in soils different from what is generally understood to be represented by the word peat, has done much to throw a certain amount of light, as well as a certain amount of doubt, on what soils suit this plant and what are at variance with it; and as failures teach us quite as much as successes, however unwilling we may be to record them, I may say that I have on more than one occasion been led into error, and although I have had a fair share of success as well, and been connected with soils widely at variance with each other, I am far from certain that I could on the moment pronounce a soil suitable for the growth of this plant by its appearance alone. But there are one or two tests by which it may be tolerably accurately judged by the wild plants growing upon it. These tests I regard of a vast more importance than either the colour of the material or its texture. Taking, therefore, the wild plants alluded to as my guides in the matter, I may say that where the following are found in abundance the Rhododendron may be planted with a fair chance of its doing well.

Foxglove.—Where this abounds the Rhododendron will thrive. I have always regarded this as one of the best of tests.

Whortleberry.—This I hardly need mention, as it is only met with on the dry moors where heath soil abounds, and in fact its roots and stems often form the peat that is exported large distances for the pot-culture of plants more choice in their selection of soil than even the Rhododendron.

Wild Sage.—This is usually met with on ground less stony than is the Whortleberry, and consequently on places where a greater depth of material exists, but it is still a dry upland plant.

Wild Heath.—This I have not regarded as so true a test as the Foxglove, as it is sometimes driven to occupy a position that nothing else would care for; and patches of Heath are often met with on wastes that present quite two-thirds of their surface perfectly sterile, not from the accumulation of stones, but from the absolute want of nutritive qualities in the material composing the surface: such places are quite unfit for the Rhododendron.

The Brake.—I would not regard this as so certain a proof of the requirements of the Rhododendron as the

Foxglove, as it is often found in situations not at all favourable to the plant in question—in fact, the Brake is almost cosmopolitan, and only in certain places where it exists in such abundance as to supersede and drive away most others is it to be regarded as indicating the site suitable for the Rhododendron.

Gorse, Furze, or Whin.—This is often found on land having little resemblance to peat, and yet it is favourable to the Rhododendron. A rather dry yellow loam more or less mixed with stones, especially if the latter be of a brown colour, all indicate a soil that is suitable; and in a general way, where this plant is met with as predominating over all others without having been assisted to do so, the Rhododendron will be found to flourish.

Broom.—This is even a better proof than the last named, and may always be regarded as indicating a soil that, if not the best the Rhododendron can be planted in, at least testifies to its being one in which it will thrive.

Scotch Fir.—Where this tree is found in its natural forests is a tolerable good index of the soil being suitable for Rhododendrons. Observe, I limit the remark to places where the tree is grown in a wild state and not where planted; for the tree is so accommodating that it will do well on most soils, some at variance altogether to the requirements of the Rhododendron.

Some other tests might be given, as it is not unusual for a pasture that contains a good proportion of the blue Scabious in it to support the Rhododendron; while, on the other hand, the presence of the Ox-eye Daisy, Primrose, Cowslip, and even the Nettle, indicates a soil adverse to the plant in question. The wild Thyme and Box tree are mostly met with in positions the very reverse to that relished by the Rhododendron. Butcher's Broom and Holly are likewise rarely met with in a suitable soil, although, like some others, these shrubs inhabit divers positions, and can hardly be called tests either way.

Coming to the subject of soil, there is something so perplexing in the term loam that it may be said to embrace almost every description of mixture, and, in fact, may be said to be an universal appellation for everything supporting vegetation excepting pure sand and pure peat; but the latter is also liable to many interpretations, and I have known Rhododendrons killed outright by being planted in peat so-called, the said peat being obtained from a bog in which the article was dug that served the purpose of coal in some places, and I suppose it would require some strong argument to convince the digger thereof and others concerned that the article was not peat; certainly it caused death to the Rhododendrons, although the Sweet Gale and other plants were, I believe, growing in it. I do not think that any kind of peat that has for ages been saturated with water is at all suitable to the Rhododendron, but wherever the same soil is met with in a dry state it may be safely used. Rhododendrons will do very well after the land has been drained, but to apply the raw fresh material of a peat bog is most disastrous. Peat that may be used with impunity in a fresh state is that from the dry upland heath, where the Heath and Whortleberry have for many years flourished.

Turning again to the equivocal term loam we find that there are certain kinds highly favourable to the growth of the Rhododendron; and although I sometimes think I can guess by its appearance whether it is favourable or not, I am far more likely to judge rightly if I see the vegetation it produces. There are some kinds of loams, or soils, that seem to grow the Rhododendron as well as the best peat that is to be met with, and in a general way all soils that overlie the yellow sandstone, or it may be the red one, seem to possess all that is required for the purpose. Moreover, there are some soils in which this plant thrives well that by appearance differ as widely as it is possible for soil to do from peat proper. In the park here we have three distinct soils—that on the highest part producing a poor wiry kind of grass when laid down to pasture, and being of a rather bright yellow colour, thin in staple, and so much intermixed with stones that if an attempt were made to sift it with a three-quarter-inch sieve more than three-fourths of the whole would remain inside, yet in this soil the Rhododendron thrives pretty well, although water is not to be obtained by sinking at less than 100 feet, the elevation being upwards of 400 feet above the sea level. At the distance of less than a mile, and some 250 feet lower elevation, the ground is a stiff clay in which the Portugal Laurel thrives well; but the Rhododendron is not by any means at home, neither is it at a station about midway between these two, and where the land is what might be called "good for ordinary purposes," most shrubs, as well as Pines and other trees, thrive well in it, but not the Rhododendron, the lime element I presume being too prevalent in it, although the stones found near the surface have no appearance of chalk, neither are they hard like the ordinary limestone; but the plants named at the beginning of these notes as indicating a suitable soil for the Rhododendron are wanting, and in fact sufficient trials have proved it not to be a suitable place for this plant.

Instances of the successful culture of the Rhododendron being common enough, it may be instructive to give one on the other side. Many years ago I was induced to try a quantity of hybrid kinds on the different soils we have here, which included a stiff retentive clay, a good loam in which most plants and trees thrive, and a harsh stony soil. To give the plants a better chance in the two first-named stations I had a quantity of compost made up, consisting one-third peat of a doubtful kind that came into my possession, but having lain a year or two exposed to the atmosphere I expected what deleterious property it once possessed might have disappeared, the other ingredients being very good leaf mould and pond mud that had lain a couple of years or more exposed to the atmosphere. This last being from a pond in the park into which a vast quantity of leaves were annually blown might be supposed to be in a great measure leaf soil, and like the other two was in good condition when used, being black and mellow; a quantity of sand was also added. I flattered myself with the hope that it would just do for the Rhododendron, but the roots would not take to it on any account. About half a barrowload or more was given to each plant, placing it immediately around its roots. The plants refused to flourish, except in one or two places, when I afterwards found out the ball had accidentally been placed adjoining one side of the hole, and it had rooted into the natural soil.

Now this experiment was not on a small scale, but perhaps five hundred plants might have been so treated, and it was provoking to see them languish and some of them half die when they were expected to prosper. The ingredients composing the mixture looked as much like a Rhododendron soil as anything could do. The leaf mould I cannot bring myself to believe was in the least in fault. Then comes the pond mud, and I have come to the conclusion that this material was the offending one, or more so than the bog peat; but the whole gave me a lesson about mixtures which I have been very shy of recommending since. When I hear of such and such a plant delighting in a mixture of loam and peat I cannot but think there must also be a third element to consider—namely, water. I have for many years been led to the conclusion that the character of the water is of more consequence than the kind of soil for plants, and I confess it did not occur to me then as it has done since to look to the water which composed the pond. Like many others, I merely thought a pond was a pond, and as cattle drank its water, and weeds, &c., grew in it, I did not examine it further, yet I believe it to be the cause of the misfortune, and that misfortune may be described in one or at most two simple words—"calcareous matter." The water supplied by springs from the limestone, and but a

short way off, had not parted with any of the obnoxious qualities (obnoxious to the Rhododendron family only perhaps) until it reached the pond, when of course it impregnated everything in it, and the sediment, tree leaves, and everything else became charged with matter not only distasteful to the Rhododendron but almost poisonous to it. Such at least is my view. The lesson, however, was not lost. I have planted a good many Rhododendrons since with a fair share of success just in accordance with the natural condition of the soil and situation, and keeping clear of mixtures. When obliged to plant a Rhododendron coming from a peaty soil I have found turf with a great deal of moss in it about the best ingredient to wean it from the peat.

One word more on the rearing of the common kinds for planting out in the woods and for covers, &c. Wherever a suitable soil exists on which the Foxglove, &c., grow abundantly, if a plot could be cleared in the woods and trenched, it is good practice to purchase a number of small plants from some nursery and plant them out in rows in the usual way, and in a couple of years they will be excellent plants to move, and being on the spot where they are wanted a larger ball can be secured to each plant than is usually sent with it from a distance where the carriage is so costly an item; besides which the plants, having become inured to the soil, grow better than when received from another one. It may further be added that young plants from some upland nursery where peat is not plentiful succeed better than from the more favoured places noted for furnishing the finest plants. In planting very small plants the following spring exercises much influence on their success or failure, as a period of dry weather may scorch them up, especially as watering by hand may not be available. A rough shading will do good by evergreen boughs or anything of that kind laid over them. Protection against rabbits also is necessary where such a plantation is exposed; for, notwithstanding the oft-repeated assertion that rabbits will not attack the Rhododendron, we have lost a good many hundreds by them, and especially young plants newly planted.—J. Bonson.

BORONIA MEGASTIGMA.

Now that this remarkable plant is becoming plentiful, and is purchasable at a reasonable price, the desirability of possessing it is urged on all who possess a greenhouse or conservatory. It has no claims to brilliancy of colour or gaiety of effect, but it has high claims of attractiveness by its extraordinary free-flowering qualities and its wonderful perfume. Its odour has been alluded to as resembling that of Primroses, but some hundreds of Primroses would be required to dispense a fragrance equal to one small plant of this Boronia.

It is a Heath-like plant, but of free growth. Its foliage is singularly slender and also somewhat sparse—precisely indeed, of a character to show to advantage the great profusion of small bell-shaped flowers. These are chocolate brown externally, their interior being yellow. They are produced from the axils of the leaves in such numbers as to render the common remark of "all flowers" particularly applicable to this plant. It is a native of the districts around King George's Sound, and is there a favourite plant on account of the delicious fragrance of the flowers—a fragrance which may truthfully be described as powerful yet not overpowering. It was introduced to Kew from seed sent by Baron Von Mueller, and subsequently living plants were presented to the Royal Gardens by Mr. Thoyet, and it is figured in the "Botanical Magazine" for 1873. It requires treatment similar to that given to free-growing Heaths, and when well grown cannot fail to be admired.

A plant of it should have a place in every greenhouse and conservatory. Most of the principal nurserymen have large stocks of this Boronia—stocks, however, which are likely to diminish, for this is a plant which cannot fail to become popular when its peculiar merits are fully known.—F. H. S.

THE ARRANGEMENTS OF COLOURS

IN THE BEDS OF THE LONDON PARKS AND GARDENS.—No. 10.

Of all the varieties of shape and form of design for flower beds, the scroll is thought by some people of taste to be the most agreeable. There is no doubt when those figures are clothed with effective colours supported by congenial tints, that pleasing and brilliant results may be attained. The most suitable place for a scroll bed is on the side of a grassy bank

or the slope of a green terrace; also by the margin of a winding walk, with here and there open spaces, an embellishment of this description would be appropriate. The following plants and their mode of arrangement are submitted as suitable for scroll-shaped beds:—

BED Q.

1. *Convolvulus mauritanicus*.—This is a fine plant for a carpet. It will soon cover the surface with its little trailing

shoots, and produce an abundance of lovely mauve-coloured blossoms all through the summer season. It may be wintered in a cold frame, and is propagated by cuttings in the spring for summer use. The cuttings root freely in a little bottom heat.

2. *Lobelia speciosa* Brilliant.—Large flower, deep rich blue with white eye. Very effective.

3. Golden Pyrethrum.

4. *Alternanthera spathulata*.—A rose-pink variety with long

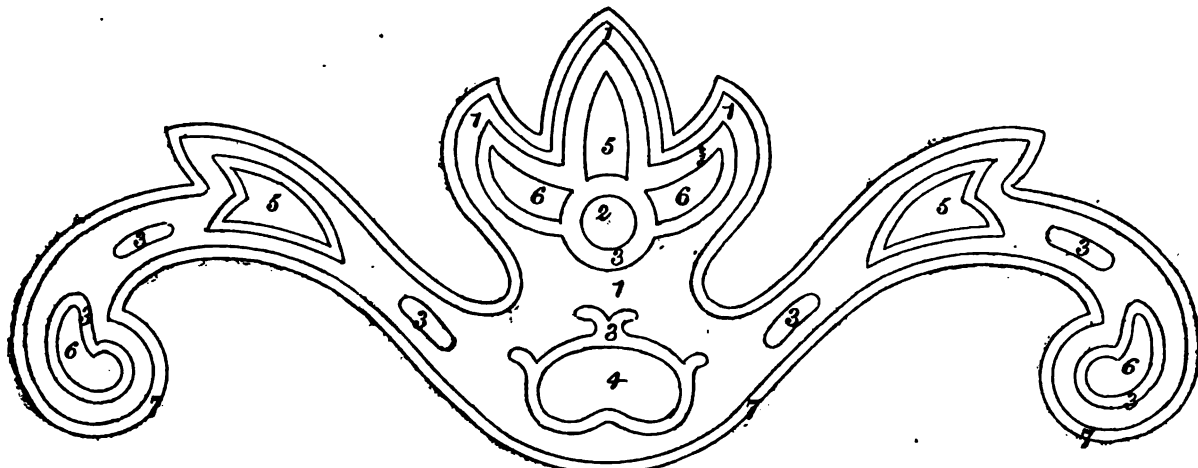


Fig. 73.—BED Q.

narrow leaves. It requires planting in poor soil, otherwise it is apt to grow green. Another way to make it retain its colour is to plunge the pots in which the plants are growing, and the plants will then retain their colour.

5. *Alternanthera paronychioides* major.

6. *Alternanthera amoena spectabilis*.

7. *Gnaphalium lanatum*.—This is well known as one of the

most useful plants for edging purposes. It may be kept compact and uniform in its growth, and may be trimmed to any shape required, and the more it is cut the better it looks, for the young shoots are almost white. Two or three old plants kept through the winter in a cold frame will give a good batch of cuttings. They should be placed in a little heat, and the shoots that are made after will take root freely.

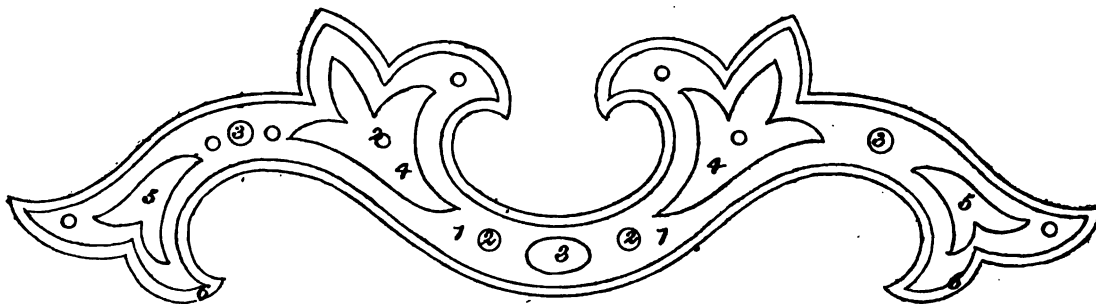


Fig. 74.—BED R.

BED R.

1. *Ajuga reptans rubra*.—This is a pretty dwarf-growing plant. The smooth and dark glossy purple leaves are very suitable for a groundwork in a design and contrast well with bright colours. It is quite hardy and will grow in any situation. Propagate by cutting the plant up in small pieces as soon as it has done flowering in April.

2. *Echeveria metallica*.—This is really the most striking and ornamental of all the *Echeverias*, with its broad, fleshy, glaucous leaves shaded with a rich metallic hue, rendering it highly decorative either singly or in groups. The best way and the easiest way to propagate it is by seed.

3. *Cineraria maritima compacta*.

4. *Alternanthera magnifica*.

5. *Stellaria graminea aurea*.

6. *Leucophyton Brownii*.—N. COLE, Kensington.

ROSE STOCKS.

In your last number (page 227), appeared some remarks on Rose stocks from the pen of a well-known amateur, the Rev. J. B. M. Camm; and with due deference to so good a cultivator, I must take exception to his wholesale condemnation of

our old friend the Briar, and his advocacy of the Manetti. A lover of Roses on any and all stocks, and a cultivator of many, I certainly admire a bed of dwarf Roses carefully and cleverly pegged down, or dwarf Roses grown and trained as pyramids on lawns or borders, but I cannot agree with Mr. Camm in his indiscriminate objection to the Briar. The expense is not so very much, say from 6s. to 8s. per hundred; stakes, tar twine, and matting are to be purchased at trifling cost. Budding is a most pleasing and interesting occupation. The excessive production of suckers is the result of excessive stimulants. Insects can easily be kept under by syringing (in favourable weather), with water in which soft soap and aloes have been dissolved. I grant the comparison to "mopsticks," but this may in a great measure be surmounted by growing Ivy-leaved Geraniums or slight climbers round the stems, and sowing dwarf annuals in the circles at the base.

Admitting the excellence of the Manetti under certain favourable circumstances of soil and situation, I must unhesitatingly claim the palm for my friend Mr. Prince's seedling Briar, which is immeasurably its superior.

Mr. Camm states that he took a field of "poor but virgin soil," and to start with manured it at the rate of 200 tons per acre! Could he be surprised that his Briars did little else but

throw-up suckers? With proper drainage and one-tenth of the quantity of manure would he not, in all probability, have experienced a very different result?

Mr. Camm in conclusion advises your readers to "let the Dog Rose bloom in the hedges undisturbed and protect the *Osmunda regalis*, &c." The *Osmunda* needs little protection with us, for in our unfavoured district you would be as likely to find an *Anthurium* or a *Poinsettia*!—WIMBORNE.

SYRINGING VINES.

"J. R. R." has written this very suggestive sentence, "It was not the water, but something deposited from it, that did the injury to the Vines." I believe "J. R. R." to be quite right; indeed he proves conclusively that he is so by the use of filtered water and the perfect cleanliness of the foliage and fruit of his Vines. The operation of syringing is of considerable importance. The syringe is almost always in use, but when used thoughtlessly the practice merges into a practice of abuse. No small amount of injury is committed by indiscriminately syringing plants and Vines. The water is piled under the impression that the foliage cannot be kept healthy and clean without it, but frequently precisely the reverse of the result sought for is the end which is attained.

Injury is done by syringing in three different ways—firstly, by using impure water; secondly, by using it at a temperature injurious to the foliage; and thirdly, by undue violence in its application. It is very rarely indeed that water in its natural state is found sufficiently pure to be freely and safely applied to the foliage of plants and Vines. Rain water cannot always be obtained; and if it can, it has been so long stored in tanks that it ceases to be pellucid, and becomes, if not muddy, at least sooty. Such water should not be used for syringing fresh from the tank, but the watercans should be filled some hours previously to the time of syringing, and if they are not moved water fairly clean can be obtained. The carrying-out of that simple practice alone will make a great difference in the cleanliness and consequent health of the foliage to which the water is applied. River water is still more rarely sufficiently clean for syringing purposes, and requires a longer time to "settle" than rain water, and such water should never be applied to the foliage of plants fresh from the pond.

Well water is yet worse, for it may be clear as crystal, yet be so strongly impregnated with minerals as to be positively injurious to the foliage of plants. I have seen the foliage of Vines almost white as a miller's hat, the result of syringing with clear spring water drawn from wells in a limestone district. The Vines were of course not healthy, the mineral incrustation causing them to be little short of suffocated. Far better is it that Vines never be syringed at all than that such water should be used. The filter is the remedy for impure water; but few have filters, and when these are not provided the water should be allowed a sufficient time to settle, or not be applied at all to the foliage of plants or Vines.

Injury is also done by syringing with water at a too low temperature. In the early days of my gardening career a part of my duty was to deluge the plants and Vines with water drawn from the taps when frequently that water was 10° to 15°, and even more, colder than the temperature of the house. No wonder that ours was not considered a "plant place," and that we had the unenviable notoriety of being associated with shanked Grapes. I am satisfied that the great cause of our failures under glass was the result of what I call stereotyped reckless syringings. The water should first be clear and then warmed to even a few degrees higher than the temperature of the house; and then if properly applied, and applied at the right time, the application will be beneficial. A system of syringing by clockwork is indefensible, yet the system prevails. It is rarely necessary that the water be applied to plants and Vines with great force, and never when the foliage is clean. If insects have gained a footing force is necessary to expel them, but I then regard the "water power" as the least of two evils. It is the gentle shower that refreshes, and not the driving rain.

But is the syringing of Vines necessary? Personally I fail to perceive the use of it; but others, whose position as good cultivators I am bound to respect, have great faith in the efficacy of the syringe. They live probably in red-spider-infested districts, and regard the use of the syringe as the natural, and almost the only effectual, antidote to the ravages of that insect. Each gardener will follow the course which he has found successful. I have found success in Vine culture without syring-

ing, and a quarter of a century's experience in four different counties tells me that Vines can be kept clean and healthy without any systematic application of water to their foliage by the usual and ordinary syringings.

That the foliage requires moisture is generally admitted; but moisture in the form of vapour is, I think, more beneficial than two showers a-day from the syringe. That applies to country districts distant from dusty roads. In neighbourhoods where clouds of dust and smoke defile the air and deposit their particles on vegetation a free use of the syringe may be necessary, but in that case I should consider two washings a-week to float the dust off the foliage preferable to fourteen ordinary sprinklings, which set and fix the dirt on the foliage almost as fast as glue.

The paths, &c., of a vinery should rarely be really dry, and should never be swept when in a dry state. Alternate syringings, dryings, and sweepings are the most effectual means of contributing to the unsightly appearance and unhealthy state of the foliage of Vines and plants. I have never found any difficulty in preserving the foliage in a healthy state by affording moisture in the form of vapour as the regular system, supplementing it with an occasional washing as I think may be needed.

This washing may be given three or four times during the season. It is then no ordinary squirting applied to the under sides of the leaves where the filth does not settle, but is mainly applied with force to the glass of the roof, the water falling down on the upper surfaces of the foliage, rinsing it of the particles of soot and dust which may have accumulated, and thus the Vines are kept healthy and clean.

I fear that the syringe is greatly abused, and that sufficient thought is not given to the nature of the water both as to its purity and temperature when it is applied to the foliage. This point is fully acknowledged and acted upon by the growers of fine-foliated plants for exhibition; and if care in this respect is necessary with the plants it is equally necessary in respect to the Vines.

I thank "J. R. R." for his suggestive communication on page 205. It will lead to thought on a subject on which thought is required, and will induce some to think who have not sufficiently thought of the matter before, that the syringe is occasionally if not frequently abused.—EX-EXHIBITOR.

AZALEAS IN THE OPEN AIR.

MR. OLLERHEAD in his admirable essay submits some good reasons against the practice of placing Azaleas in the open air, and probably there are not many cultivators who would prefer to expose their plants if they had proper houses in which to afford them shelter. A great number, however, of those who grow Azaleas have not the desirable conveniences, and thus are compelled to submit their plants in summer and autumn to out-of-door treatment. It is a great merit that the plants will endure this treatment, not only without receiving serious injury, but occasionally with advantage. I mean that a good position in the open air in late summer is more favourable to the plants than is a bad position under glass.

The plants should never be removed from the houses until their buds are set, and then the pots should always be shaded from the sun, for as much injury is done by extreme heat and dryness as by extreme moisture by heavy rains. Moreover, a few broken slates or tiles laid over the surface of the pots will do much to prevent the soil from being either seriously scorched or soddened.

Mr. Ollerhead has also detailed his mode of successfully renovating unhealthy and neglected plants. His plan is probably the best that can be generally adopted. I will, however, describe one more simple, and referring immediately to plants in the open air. Several years ago I was instructed to destroy some unhealthy Azaleas, but instead of throwing them on the rubbish heap I planted them in an obscure place in the shrubbery, the soil being sandy loam. Soon they commenced making fresh growth, and I was pleased to find that the mild winter following did not injure the plants. In the following summer the plants were restored to excellent health, and some of them were potted. The others were left to take their chance, and they grew and flowered in the shrubbery for some years until a severe winter, which brought down the thermometer to zero, killed the plants.

I write this thinking that Azaleas may be more hardy than they are commonly imagined to be, and to state that "turning the plants out of doors," planting them out, and

again potting them, has frequently been found beneficial.—
A SURREY GARDENER.

ALONSOA LINIFOLIA.

BEAUTIFUL as is *Alonsoa Warszewiczii*, alluded to at page 198, I consider *A. linifolia* to surpass it in size of flower, free-flowering, and length of spikes. The flowers are light scarlet, rather distantly disposed in a long spike, having a light elegant appearance, hence its charm for cut flowers. The leaves are rather long and narrow, deep green, and grass-like. The habit of the plant is pyramidal. It is effective as a decorative plant, and its sprays are valuable for cutting.

The plants I have are about 3 feet high, furnished from the base of the plants upward, and have been in flower generally since December, and are likely to continue for months to come. The plants have capsules of seed ripening, spray in full bloom, and fresh growth being made abundantly. They are in 8-inch pots. The seed was sown in April of last year in fibrous loam with a third of leaf soil and a free admixture of sand, and placed in a hothed along with pots of *Clianthus Dampieri*, &c., and were kept moist. The plants were potted-off singly when an inch high, returned to the hothed until established, and then transferred to a cold frame. They were shifted into 5-inch pots when the 3-inch pots were filled with roots, and given the blooming pots early in August, and were grown in a cold pit until early in October, when they were placed in the greenhouse, a few flowers being produced in September, and more or less since, some of the plants only now commencing flowering. The forwardest plants had many flowers in December, and are now producing abundance of their elegant-flowered sprays. This plant does not succeed in a damp dark house, but requires a light airy position.—G. ABBEY.

ROYAL BOTANIC SOCIETY.

MARCH 29TH.

THE first spring Show of the Society was held in the corridor, the collections of plants extending into the conservatory. The Hyacinths were perhaps not so fine as the spikes exhibited last year, but the Tulips and Cyclamens were better. The Azaleas and miscellaneous collections, including Roses, contributed considerably to the general effect, and the Exhibition in its entirety was worthy of the patronage of the visitors.

In the open class for twelve stove and greenhouse plants in flower in 12-inch pots Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, exhibited in his usual excellent style. Striking in his group was the gigantic form of *Anthurium Scherzerianum*; and *Acacia longifolia magnifica*, *Eriostemon intermedius*, *Cytisus racemosus elegans*, *Euphorbia Eclipsa*, and *Phaius grandiflorus* were large and good. The rest comprised three excellent Orchids, a *Franciscia*, Azalea, and *Boronia*. Mr. Toms, gardener to H. Wettenthal, Esq., Sevenoaks Road, was placed second; and Mr. Wheeler, gardener to Sir T. H. Goldsmid, was placed third.

For six forced hardy shrubs (open), a third prize was awarded to Mr. Wheeler for a poor collection.

In the amateurs' class for six greenhouse Azaleas in 12-inch pots, Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, staged an excellent group of large globular plants, which were remarkably healthy and well-flowered. Mr. Wheeler, gardener to Sir F. Goldsmid, also exhibited in this class and took the second prize. In the nurserymen's class Mr. B. S. Williams was the only exhibitor, and was awarded the first prize. For six pots of *Idly* of the Valley fair average examples were staged by six competitors. Messrs. Jas. Carter & Co. won the first honours. Mr. Toms being placed second, and Mr. Weir, gardener to Mrs. Hodgson, Hampstead, third. For six Chinese Primulas Mr. James was placed first with rather large but not fresh plants, Mr. Wheeler having the second place with small plants. In the class for nine *Cinerarias* Mr. James, gardener to W. F. Watson, Esq., was the only exhibitor. He staged dwarf well-bloomed plants in distinct varieties; Purple Gem, Thomas Loveland, Crown Prince, Charles Bending, Her Majesty, and Treasure being the best sorts.

In the amateurs' class for twelve Hyacinths there were three competitors, first honours going, as usual, to Mr. Douglas, gardener to F. Whitburn, Esq.; second to Mr. Weir, and third to Mr. Moorman, gardener to the Misses Christy, Kingston; the corresponding nurserymen's class being occupied by Messrs. Outbush & Sons, Messrs. Barr & Sugden, and Messrs. Carter and Co. in the order named. In the foregoing classes fasciated spikes were excluded, but an open class was provided in which compound spikes were admitted. There were five competitors, and, if the spikes were not quite so symmetrical, they were more imposing than those in the preceding classes. Mr. Douglas

won the first honours, Messrs. Outbush & Son being second, and Messrs. Barr & Sugden third.

In the amateurs' class for twelve Tulips in four kinds the collections were remarkably uniform and good. Mr. Douglas was placed first, Mr. Moorman second, and Mr. James Weir third. In the corresponding nurserymen's class the competition was between Messrs. Barr & Sugden and Messrs. Outbush and Sons, who were placed in the order named. The best varieties of Hyacinths and Tulips for exhibition have been enumerated in previous reports.

For six *Deutzias* (open), Mr. Douglas, gardener to F. Whitburn, Esq., Loxford Hall, was far in advance of the other competitors, his plants being 3 feet high and 2 feet through, veritable pillars of purity; Mr. James being placed second, and Mr. Toms third. In the open class for twelve Cyclamens first honours went to Mr. Goddard, gardener to H. Little, Esq.; second to Mr. James, gardener to W. F. Watson, Esq., Isleworth; equal third to Mr. Smith, Ealing Dean Nursery, and Mr. Clark, Twickenham. The plants were all remarkably well grown, and the varieties good. Mr. Clark also exhibited a miscellaneous collection, some of the varieties being very large and others exceedingly rich. For twelve Clematises Mr. Wheeler was the only exhibitor. The plants were poor, and received a third prize.

The miscellaneous groups added greatly to the attractiveness of the Exhibition. These were contributed by Messrs. Veitch and Sons, Mr. B. S. Williams, Messrs. Paul & Sons, Cheshunt; Messrs. J. Carter & Co.; Messrs. W. Paul & Son, Waltham Cross; Mr. James, Mr. Goddard; and attractive groups of Orchids from Mr. Helms, gardener to F. A. Philbrick, Esq., Avenue Road.

Amongst these collections there were many beautiful and rare plants, and particularly attractive were the Roses in pots, and also fine boxes of cut blooms from Messrs. Paul & Sons, Cheshunt, and near them boxes of cut blooms of Camellias from Messrs. W. Paul & Son, Waltham Cross, and Messrs. Outbush and Son.

Owing to the delay in affixing the awards we were unable to wait for the official list of medals and certificates, of which many of the groups, and some individual plants, were worthy.

SINGLE PRIMROSES.

IN the report of the Primroses which were exhibited at South Kensington on the 15th inst. it is stated that "Lady Adeline Tylour is the same plant that has usually been grown as *Primula altaica*." If, however, anyone will compare them, it will be found that there is a considerable difference, and that Lady Adeline Tylour is a distinct variety. Mr. Niven of the Earl Botanic Gardens has recently pronounced this so-called *Primula altaica* to be *Primula acaulis grandiflora*; but Mr. E. W. Badger of Birmingham, a well-known amateur horticulturist, has just sent me an extract from a report of one of the meetings of the Royal Horticultural Society, held February 20th, 1849, which shows that a Primrose exhibited on that occasion by Mr. Darbishire, and awarded a Knightian medal, was without doubt the same that we have been growing as *P. altaica*, and on that occasion it was declared to be identical with the *P. altaica* of the Russian botanists.

It is further stated that some hardy Primroses were shown before the Floral Committee by Mr. Dean, but were "not sufficiently distinct to merit notice," and that "names of Primroses are being somewhat unnecessarily extended." The plants in question were seedlings, only two of which were named, and one of them was so far distinct that the flowers were more perfect in shape and larger than those of any other variety. I think improvements in that direction therefore merit a fairer recognition, and deserve praise equal with the improvements sought to be made in any other florist flower.

As far as high-coloured Primroses are concerned, it is unfortunate that the dull leaden light of the Council chamber on such a day as Wednesday last should tend to disparage the beautiful hues now found in the Primrose, but these when seen in a spring sunlight are rich and glowing. We have not more than a dozen named single Primroses in cultivation. I think if sorts can be produced with flowers as large and rounded as a florin, colours rich and varied, having perfect thrum eyes, and in every sense true florists' flowers, they are as well worthy naming as are those of any other class or species.—ALEXANDER DEAN.

[That Lady Adeline Tylour has been "usually grown as *P. altaica*" was testified by an unprejudiced cultivator, who for many years has had the best opportunities of forming a correct judgment. That the seedlings were "not sufficiently distinct to merit notice" was the conclusion of the Floral Committee, for they did not notice them. As to the "undue extension of names," the remark applied generally, and to all

the types of hardy Primroses, and there were plants (named) in the Exhibition very far from possessing high qualities.]

FIG, DR. HOGG'S BLACK.

As a knowledge of the wholesome properties of the Fig becomes better known there will, no doubt, be an increased demand every season for any variety possessing sufficient merits to distinguish or recommend it as superior in some respects to others. One of the chief merits of the new variety known as Dr. Hogg's Black is its being early and good for forcing. We find it a fortnight earlier than any other variety we have; it is also an abundant bearer with frequently as many as a dish ripe at once on a pot plant. In this respect it is very different to some of the large varieties, as Castle Kennedy, Brunswick, or White Genoa, where, unless the tree is of large dimensions, there is seldom more than two or three fruits ripe at one time. Its habit is also sturdy and good for pot culture. The following is Dr. Hogg's description in the "Fruit Manual":—

"Fruit medium size, oblong obovate. Neck short or wanting. Skin slightly hairy, of a dark mulberry colour, covered with a thick bloom and various little white specks on the surface, which is slightly furrowed in longitudinal lines, and the skin cracks lengthwise when the fruit is fully ripe. Stalk very short and thick. Eye small and closed. Flesh dull red, with a thick syrupy juice, very richly flavoured."

Mr. Barron, the Superintendent of the Royal Horticultural Society's Garden, after endorsing the above adds—"Flesh reddish amber quite to the centre, rich, juicy, and excellent. A very handsome Fig, and a great and free bearer. The plant is of somewhat stubby growth, and is admirably adapted for pot culture."

The history of this Fig is, as I understand: Dr. Hogg, who has a keen eye for anything good in the fruit line, saw it in a vineyard at Toulouse, and sent it in 1864 to the gardens of the Royal Horticultural Society. Previous to that the only plant in this country that I knew of was at Oliveden.—J. F., *Oliveden*.

NOTES AND GLEANINGS.

THE difficulties with which IMPORTERS OF PLANTS have to contend, and the expense which is incurred in providing healthy stocks of rare plants, is demonstrated in the case of a consignment of plants from Columbia to Mr. Bull of Chelsea. We are informed that out of 11,000 plants which were packed only 3000 arrived in a live state, which goes far to explain the high prices which are maintained by rare plants from distant countries.

A VERY successful meeting of the members of the Wimbledon Gardeners' Society was held in the Lecture Hall on the evening of the 24th inst. Mr. Ollerhead was elected chairman. Mr. Roser was called upon to read a paper on FRUIT CULTURE. Mr. Roser, who is a gardener of long experience, also possesses a store of humour, and he instructed and also amused his hearers. The purport of his paper was that a judicious pruning both of the roots and branches of fruit trees is the only means of producing handsome and profitable trees, and he submitted excellent specimens of branches which had been produced by the system which he described.

A CORRESPONDENT (Mr. F. A. Fawkes) writes that "in Whitehall Place—the chief communicating street between Charing Cross and the Thames Embankment before the new street was opened—is to be seen a sight which will gladden the heart of any lover of nature; for in that short street may be seen a David which has braved and withstood the fury of the modern Goliath of bricks, mortar, and masonry. Not long since the street was widened, and part of the gardens on one side was enclosed. In doing so A TREE would come in the middle of the paved pathway. Strange to say, considering bricklayers' and stonemasons' usual appreciation of trees, that tree still exists in the middle of the path, the flagstones being neatly cut to fit the trunk."

THE first Exhibition of the BURTON-UPON-TRENT HORTICULTURAL SOCIETY is announced to be held on June 28th. It is open to all England, and prizes of £20, £10, and £5 are offered for twelve stove and greenhouse plants. As a special attraction of the Show, and as a means of furthering the success of the Society, Mr. Bass, M.P., permits the plants of Rangemore to be arranged as a prominent part of the Exhibi-

tion—not as competing for the prizes, but as a generous grant to the Society and the public. The Rangemore collection usually occupies one large marquee, and is an attractive feature of the Exhibition.

WRITING from Lincolnshire, a correspondent states that "a cold, wet, dreary winter has been followed by a most inelament spring. Frost and snow has lately predominated, and from the 9th to 24th inst. the thermometer has registered 8° to 9° of frost. Apricot trees are in full bloom, and where not protected are greatly injured."

WE are informed that Mr. COOMBER has been appointed to succeed Mr. DON as SUPERINTENDENT OF THE ROYAL BOTANIC SOCIETY'S GARDEN at Regent's Park. Mr. Coomber has been gardener at Knole Park, Sevenoaks, for nine years, and in consequence of his ability and courtesy a testimonial is to be presented to him by his friends in that district.

WE have received from Messrs. Roberts, Bros., Brinfield, near East Grinstead, Sussex, twenty-four trusses of *Vesuvius GERANIUM* from a consignment of flowers which were being sent to Covent Garden. These trusses are exceedingly fine, the colour of the flowers being even brighter than when grown in the garden during the summer, and demonstrate that *Vesuvius* is one of the most valuable of scarlet Geraniums for winter-blooming and for forcing purposes.

A TELEGRAM of recent date states that the VINE COUNTRY in the east of France is seriously threatened by a continuance of the heavy rains, which may spoil all the crops. The inhabitants are in a state of great apprehension. Alsace is suffering from all the severities of winter. The snow remains in the streets, and all the water exposed to the atmosphere is covered with thick ice.

PEACH FORCING—THINNING AND DISBUDDING.

MOST important in the culture of stone fruit is the practice of attending to the growth which is to form the main and fruit-bearing branches for future years. The well-being of these should ever take precedence of the present year's crop, for without well-ripened wood it is useless to expect fruit—fruit buds there may be in abundance, and flowers which to the ordinary observer may appear like other flowers, but some of their parts will be deficient and they will prove abortive. In the forcing house this needs more attention than it does out of doors or in a cold house, for the growth is made at a time when there is a deficiency of light, and owing to our being anxious to use every inch of room we are too apt to have the branches crowded.

Disbudding, I consider, requires more thoughtfulness and judgment than all the other operations connected with stone-fruit culture. It should never be trusted to a novice unless the trees are his own property. It is more difficult to teach than is winter pruning, though that is not easy with fan-trained Peach trees. Even those who are not novices are often far too careless about disbudding. They do not take the time necessary to look to each branch separately. I would not have a shoot removed without first looking at it twice.

The petals should always be allowed to fall before there is a wood bud removed, and before any branch is operated on it should be decided which shoot is to be allowed to grow to form the fruit-bearing branch for the following year. Generally this should be from the lowest bud conveniently situated on the bearing branch, and the growth from this bud should have even greater care than the fruit, but happily we can care for both at the same time. The first shoots to be removed are those growing under the branches, and this whether they have fruit on them or not; for fruit situated there would not have sufficient light to bring it to perfection. These under shoots will generally be sufficient to remove at the first operation. In about two days' time the trees may be gone over again, taking two or three more shoots off each average branch, always keeping an eye on that which is to be left for the coming year.

There should never be much foliage removed at one time, but the trees should be looked over several times at intervals of two or three days, and always manipulated with the same finger and thumb. It is not well to strip a bearing branch for several inches in length, but to leave shoots at intervals where there is room, and keep them stopped to three or four leaves; this will encourage the circulation of sap towards the fruit. The shoot which grows closest to the fruit, springing generally

from the same triple bud, helps the growth of the fruit considerably, and is I think generally stopped too short. I let it grow 6 or 7 inches before stopping, and then strip off three or four of its lower leaves so as to admit light to the fruit, leaving six or more leaves above to keep up the circulation. The lower leaves of this shoot generally shade the fruit, and if the shoot is stopped short one is afraid to pull off a leaf, for there are none to spare. I am convinced that Peaches are all the better if they have direct light during all their growth; it is not enough to expose them to the light when they are half grown or more, the colouring matter is formed, to a great extent, earlier than this.

When the trees have made vigorous growth with their leaves of a dark green colour and a large size, but not earlier, the knife may be used freely to cut out branches which have failed to fruit or which are not wanted, thereby giving more room for training the young growths.

The fruit should be thinned immediately it commences swelling, when it can easily be seen which takes the lead, pulling off unflinchingly all the backward fruits, for those which are forwardest now will be the first to commence stoning, and the trees' seed-producing power may be exhausted before the later fruits commence to harden. During the stoning process there is nothing, as far as I am aware, in the outward appearance of the fruits to show which are the forwardest, for in a week after stoning has commenced the backward fruits will be as large as the forwardest, and no difference will be observed till the backward fruits commence to shrivel or drop, and the forwardest commence their second swelling.

One of the greatest difficulties with forcing houses this season has been to keep the atmosphere sufficiently moist. The wind at times was blowing a hurricane and the sun shining brightly. If no air was given the temperature would rise very high, and if air was admitted the atmosphere would speedily become parched. Of the two the high temperature does the least harm generally. I am not afraid of a little solar heat. My houses were kept as close as possible for days during rough bright weather, and damped frequently with warm water; even hot water was at times used for paths and walls.—W. TAYLOR.

ROSE INSECTS.

I THOUGHT I could rouse the spirit of enthusiasm about Roses, but will henceforth consider myself as cool as a Cucumber in comparison to the Rev. J. B. M. Camm. It is pleasant, however, to find my pet Manetti stock taking so good a lead.

My object in writing is, however, to put Mr. Camm right on one point. He says, "The Rose grub hides itself in the stock just where the knife mark is, and comes out with the spring to leave a nasty little greasy grub in the young leaf," &c. This is a mistake. The grub he evidently alludes to is the grub of the Rose Saw-fly, and is no relation even of the little wretches, "the worm in the bud" that eat out the young buds, which are the larvae of several species of Lepidopterous insects, and belong to the Tortrices, and are in the imago or perfect state very pretty little moths, which may be known by their blackish-brown and white colour.—W. FARRER.

[There are two Tortrices which are enemies of the Rose, and are described by Mr. Westwood as follows:—

"*AGROTIS BERGMANNIANA*.—This pretty little moth measures about half an inch in expanse, the fore wings and front of the body being of a rich golden yellow clouded with orange, with four purplish brown bars, the two middle ones running obliquely across the wing, and all being ornamented with silvery scales, a patch of which exists also in the yellow ground near the middle of the wing. The fringe is pale yellow, the hind wings are blackish brown.

"The caterpillar is produced from eggs deposited in the previous summer by the parent moths, and commences its attacks on the leaves as soon as they appear by attaching two or more together back to back with fine silken threads before they are expanded, giving the packet somewhat the appearance of a fan folded up. Here it is provided with an ample supply of food, and the outer leaves in their effort to grow are forced out of their natural position and become distorted and unsightly, the holes bitten by the insect increasing in size according to the growth of the leaf. In like manner they delight to fasten one or more leaves upon the surface of a bud whilst very young, which serves them for a defence, beneath which they devour part of the petals of the flower as well as the leaf.

"The caterpillar is of fleshy substance, and a dark flesh colour with a black shining head, and two black patches on

the first segment of the body. The second and third segments are spotted with brown. It has six short black-jointed legs attached in pairs to the first three segments after the head; the fourth and fifth segments are simple, but the sixth and three following segments, as well as the last segment of the body, are furnished with a pair of short, fleshy, false legs (or pro-legs) of a dark flesh colour. When disturbed this caterpillar drops itself down from its retreat, taking the precaution, however, to spin a thin web from its mouth, by which it is able, after the danger is passed, to remount to its former abode. When full grown it fastens the leaves together with silk threads, lining the inner space with silk, within which it throws off its caterpillar skin and assumes the chrysalis state, generally about the end of June. The chrysalis is of a shining reddish-brown colour, with transverse rows of short spines or hooks directed backwards.

"The only methods for the extirpation of these insects is by sharply pinching those Rose buds or leaves which are evidently attacked by the larvae in early spring. This will not only destroy the insect, but will enable the plant to throw out fresh leaves. If allowed to arrive at maturity the perfect moths ought to be destroyed as soon as they make their appearance, before they have time to deposit their eggs, for which purpose a small gauze hand-net at the end of a stick may be employed, the moths coming abroad on the wing almost as soon as the sun has set.

"*SPILONOTA AQUANA*.—This species of Bell Moth measures rather more than three-quarters of an inch in the expansion of its fore wings, which are ashy white, with leaden or slaty-coloured clouds, and with a broad somewhat triangular brown patch at the base, angulated at its extremity, and with a small tooth-like pithy or black spot towards the posterior or anal extremity of the wing; the apical margin, especially towards the tip of the wings, is pithy red or brownish, mixed with leaden scales, and the fore margin is marked with numerous short, oblique, pithy, alternate lines and small triangular spots. The moth appears in June in gardens and woods, its caterpillar fastens together the leaves of the Rose, and forms a silken web between them, in which it becomes a chrysalis."

DESTROYING RED SPIDER.

AN experienced gardener states that "the mode of killing red spider with sulphur on the shovel, as described at page 218, is a sure cure. While I was at Chatsworth we used to place firebricks on a hot plate till they were very hot, then take them to the vineries, before they were taken in trying them with a pinch of sulphur dropped on each. If the sulphur only melted like treacle they were safe, but if a small blue flame was emitted they had to cool further before admitting them into the house. The plan is certain death to the spider, but it has to be very carefully applied."

Mr. DOUGLAS on page 240 states that Cucumbers "will not endure sulphur fumes sufficiently strong to destroy red spider;" but "G. W. Y." has stated that he has destroyed the pest with sulphur fumes. I wish to state that I have many times assisted "G. W. Y." in destroying red spider, and that we have most completely destroyed it by the mode described, and without injuring the foliage of either Vines, Cucumbers, or Melons. But the operation must be very carefully performed, and the editorial note was opportune, lest an useful practice might be abused. I never hesitate to adopt the plan, but I would not permit the sulphur fumes to be distributed by any other hands than my own.—A NOBLEMAN'S GARDENER.

LOCAL NAMES OF APPLES.

THE Apple named by "W. W., *Stainton-in-Cleveland*," as Robin Knaggs is also known in that locality as Knaggs's Pippin, and is worthy of the praise bestowed upon it, and far more. It is a capital kind for bringing down the scale in the market. It is known in another locality in the county of Durham as Nanny Jackson. Some years ago I sent specimens of Robin Knaggs from the neighbourhood of Stainton-in-Cleveland to Dr. Hogg, and he informed me through the *Journal* that they were Striped Boefing, and he says a good deal for it in the new edition of the "*Fruit Manual*," on page 141.

As Copmanthorpe Crab is mentioned I may state that I know a locality where it is known as Robin Buck, and is held in high estimation. When a boy I remember on the 28rd of

November, and during a very hard frost, gathering a fine crop of this kind of Apple from leafless trees. It was more like handling stones than Apples, the fruit rattling like pots when touching one another. Like the foregoing, this is one of the best keeping Apples we have. It is described in the "Fruit Manual," new edition, page 41, as Dutch Mignonne, where the author has much to say in its favour.—M. H., *Camphill, Bedale*.

EUPHORIA LITCHI.

THE Leechee, *Nephelium Litchi*, *Dimocarpus Litchi*, *Seytalia Litchi* of Roxburgh, called also *Euphoria Litchi* by Jussieu. It is a highly esteemed fruit, originally brought from China, but long since fully naturalised in India, where it grows and ripens to great perfection, bearing the next place to the Mango in general estimation. The outside has a stiff, rough, reddish skin, and the pulp is rich, sweet, and firm.

Propagation is best performed by layers, the plant readily throwing out root-fibres.

Soil, &c.—A rich mould, not too dry, is the best suited to the Leechee.

Culture.—After the young plant is put into the fruit garden it must be carefully watched for the purpose of training the stem and removing the lower shoots and suckers, as this tree when young grows very rapidly, being also much disposed to become crooked, straggling, and ill-shaped. In the sixth year it may be allowed to bear a moderate, but only a moderate portion of fruit, but till it attain that age the blossoms should be entirely removed as soon as they appear, and even then at least three-fourths should be taken off and not permitted to set. When bearing the roots should be occasionally moderately watered, the fruit ripening in March and April.

In 1816 John Knight, Esq., of Lee Castle, near Kidderminster, sent to the Royal Horticultural Society a quantity of the fruit of the *Dimocarpus Longan*, ripened by him this summer in a stove erected for the purpose of growing tropical fruits. That was believed to be the only instance of the fruit having been brought to maturity in Europe, and persons who were well acquainted with it in its native places of growth pronounced these specimens quite as good as those grown within or near the tropics. The Leechee fruits are of a red colour when ripe, excepting in one variety, in which the coat remains green. Their pulp is surrounded with a tough, thin, leathery coat; it is a colourless semi-transparent substance, in the centre of which is a dark brown seed of different sizes in the different varieties. The flavour of the pulp is slightly sweet, subacid, and particularly pleasant to the taste in a warm climate. The fruit dried either in the sun or by fire heat is frequently brought to England by the ships from China. In this state the pulp is shrivelled and reduced within the coat or shell to half its usual size, and has a rich and sweet taste if it has been well preserved.—(*Speed*.)

PRIMULAS.

I would recommend your correspondent "G. A." (page 280), who grows *Primula denticulata*, to add to his collection *P. pur-*

purea and *P. pulcherrima* (Backhouse). They follow immediately after *P. denticulata*, and both have still finer heads and larger richer-coloured flowers.

P. viscosa is now in beauty here in a brick frame, also *P. marginata* with its lovely large flowers and pretty leaves. *P. helvetica* is just coming into flower, and will be followed by *P. ciliata* with its rich very deep colour.—GEORGE F. WILSON, *Heatherbank*.

BRIAR STOCKS FOR ROSES.

I SEE Mr. Camm decides distinctly against the Briar. Some fifteen years' experience on a light and greedy loam does not incline me to fall in with his opinion. Certainly his record of

Briar ingratitude is something stupendous. On a very much smaller scale I have had similar disappointments, and especially of late, with the seedling Briar. An enormous per-centage of inserted buds have died, apparently smothered by the too-abundant asp. Still I should not say it was either the Briar's or the seedling Briar's fault. There is an old proverb respecting the man who is his own lawyer, which I strongly suspect applies to the man who trusts to his own budding for exhibition blooms from off Briars. A long experience has shown me that it is utterly impossible to vie with the nurserymen, and infinitely better to buy established plants of them, except for pleasure and possible advantage in some few instances.

Had Mr. Camm ordered that ten thousand from any one of our great growers, I will answer for it he could have had very few successful rivals last year; and, as for it being cheaper, at the price Roses are now at the close of the season I should say, If you intend winning, it is infinitely cheaper to buy than to bud. Every pheasant, in many a cover, costs its

owner by the time it is killed very probably four times what he could have bought it for at the poulterer's; and most home-budded Briars from which an exhibition bloom is cut costs their owner, I incline to think, very much in the same proportion. But to return to the old controversy. I venture as an amateur to give my opinion that finer and deeper-coloured Roses may be, and often are, cut from off the Briar than it is possible in very many instances to cut from off the Manetti.—A. C.

MR. CAMM says of standard Briars that "they do not live half or a quarter of the time that dwarfs do." But I can testify that, while fully acknowledging the superiority of the dwarf Manetti stock, the standard Briar will, under favourable circumstances, live and flourish for at least a quarter of a century. There are many such standards at River Hill near Sevenoaks, trained in hemispherical form over hoops, and annually presenting masses of bloom from 4 to 5 feet in diameter, with every appearance of retaining their vitality for many years to come. The soil is stiff approaching the weald clay.—A. R.

DEEPDENE,

THE SEAT OF MRS. HOPE.

THE Deepdene derives its name from the Saxon *Deop den*, a deep vale, which especially applies to the natural con-



Fig. 75.—EUPHORIA LITCHI.

figuration of the ancient part of this place. We find Deepdene first noticed as a residence by Evelyn in his Diary in 1555, in which he says, "I went to see Mr. Cha. Howard's amphitheatre garden or solitaire recess, being fifteen acres invironed by a hill. He showed us divers rare plants, caves, and a laboratory." At that time Mr. Howard had been its owner about three years, and had planted a vineyard and otherwise beautified the estate. Aubrey also speaks of this place, which he visited between the years 1678 and 1692, in the following enthusiastic terms:—"Here the Hon. Charles Howard hath very ingeniously contrived a long Hope in the most pleasant and delightful solitude for house, gardens, orchards, &c., that I have ever seen in England. He hath cast this Hope into the form of a theatre, on the sides whereoff he hath made several narrow walks, which are bordered with Thyme and some Cherry trees, and Myrtles. In short it is

an epitome of Paradise, and the Garden of Eden seems well imitated here."

It was in this delightful retreat that Mr. Howard lived many years, chiefly employing himself in experimental researches in natural philosophy; but chemistry was his favourite study, and for the more commodious prosecution of which he erected laboratories in subterranean grottoes formed for that purpose. Amongst other works which he carried on here one was a passage through the hill, which was intended to let in the prospect of the Vale of Sussex from the south, but the earth having fallen in the design was not carried out. The passage is now used for a Potato store; and a second one, 50 yards long, is now used as an Apple room, and the Potatoes and fruit keep remarkably well in these capacious caves.

Mr. Howard died in 1713, and the following tribute to his character was written by the late Lady Burrell in 1792. It is



Fig. 76.—DEEPDENE.

recorded on a tablet in the original garden affixed near the entrance to the grottoes that formed part of his laboratory.

"If worth, if learning, should with fame be crowned,
If to superior talents praise be due,
Let Howard's virtues consecrate the ground
Where once the fairest flowers of science grew.

"Within this calm retreat the illustrious sage
Was wont his grateful orisons to pay;
Here he perused the legendary page,
Here gave to chemistry the fleeting day.

"Cold to ambition, far from courts removed,
Though qualified to fill the statesman's part,
He studied Nature in the paths he loved,
Peace in his thoughts and virtue in his heart.

"Soft may the breeze sigh through the Ivy boughs
That shade this humble record of his worth,
Here may the robin undisturbed repose,
And fragrant flowers adorn the hallowed earth."

A descendant of Mr. Charles Howard afterwards became Duke of Norfolk, whose son, the eleventh Duke, sold The Deepdene in 1791 to Sir William Burrell, from whose son it was purchased by Mr. Thomas Hope about 1806.

Thomas Hope, Esq., the purchaser of The Deepdene, was of the family of the Hopes of Amsterdam, a great banking firm. He was a great patron of the fine arts, and also a cultivator of the same in his own person. He was a distinguished writer, and was the author of "Anastatius" and several other works on costumes and architecture. He was a great collector of

works of art, both ancient and modern, as the splendid collection of sculpture, paintings, furniture, etruscan vases, &c., in the mansion at Deepdene simply testify.

Mr. Hope died in 1831, when Henry Thomas Hope's eldest son succeeded to the estates, which he held till his death in 1862. Mr. H. T. Hope was a great friend of Mr. Disraeli, the present Prime Minister, and his first novel "Coningsby" was written here, as may be seen in his dedication. Mrs. Hope has held The Deepdene since Mr. Hope's death, and by her great taste and with the assistance of able gardeners has added considerably to its beauty and attractiveness.

Of Deepdene it has been said that no place in England would be so appropriate for performing the religious rites of the Celts, its amphitheatral form, its dells, mounds, and bowery solitudes imparting to the demesne a romantic aspect.

The mansion, which is a large and imposing structure in the Italian style of architecture, is erected on the northern declivity of a richly wooded hill overlooking a picturesque valley and commanding extensive views. The grounds are approached from Dorking through a young avenue of Limes, and the undulated park contains ornamental groups of Scotch Firs, Beeches, Oaks, &c., with here and there a solitary Birch weeping in silvery gracefulness. Entering by the kitchen garden we pass through an avenue of pyramid fruit trees, and arrive at the pleasure-ground boundary—a massive hedge of Laurels and Ivy. Through a fine natural arch of the latter plant we

reach the lawn, and the singular beauty of the place is at once apparent.

We first pause to admire the bold mounds, densely clothed with Ivy and St. John's Wort (*Hypericum calycinum*), the summits planted with evergreens, and their sides dotted with clumps of Pampas Grass. These extensive mounds suggest the incomparable value of the ground plants named for covering surfaces in sun or in shade. Emerging from between these richly clothed mounds the extensive lawn is spread before us, and on this lawn, not formally or closely disposed, are many exceedingly fine Conifers and other trees. Cedars of Lebanon and Evergreen Oaks are of noble proportions; and not less majestic is a Douglas Fir, its stem being quite 4 feet in diameter, the tree being in exuberant health and coning freely. Its top has been broken off, so that it is not more than 40 feet high, but it is 67 yards in circumference where its branches sweep the lawn. Other noticeable Conifers are *Pinus insignis* and *P. Morinda*, each 40 feet in height and having trunks 2 feet 6 inches in diameter—truly grand specimens, and equally large and perfect is *P. pinsapo*. *Cupressus Lawsoniana* is 30 feet in height, and of the same size is *Thuja gigantea*—a splendid cone; and in pleasing contrast is *Abies Glanbraziliensis*, a dense close hedgehog-like bush 5 feet high and through. Nearer the mansion is a Tulip Tree, large almost as the largest of ancestral Elms, and is a splendid object when in full bloom. At the north side of the mansion is a high and steep grassed terrace, the walk on the summit leading to the south side, where a semicircular conservatory adjoins the mansion, at the front of which is a small Italian flower garden.

The conservatory is not large but is highly attractive. The roof is supported by four pillars, up which are trained *Cobea scandens variegata*, which is conducted round the circular framework of the roof, and thence descending almost to the ground forms an elegant fringe. In the centre is a handsome white marble vase flanked by a pair of Chinese vases of great value, one of these containing a plant of *Seafortia elegans*, the other a fine specimen of *Platyocentrum aleochara*. At the base of the vases are plants of *Maranta zebrina*. The two beds of the conservatory are occupied by *Camellias* in pots, and are fringed with forced shrubs and flowers. Opposite the door is a gallery of Palms, &c., which completes the adornments of the structure. From the terrace looking northwards we can appreciate the full beauty of the grand lawn, and on the opposite—the carriage frontage—the effect is not less imposing. The mansion, which is a magnificent pile, is partly clothed with *Magnolias*, and is ornamented with marble columns and statuary, and in summer Orange trees are placed on the terrace to complete the ideal Italian picture. It is Italy on one side, England on the other.

We are now on a capacious and perfect plateau of gravel, and rising from our feet and receding in a bold sweep is an equally capacious lawn leading to the forest of *Rhododendrons*. The effect of this abrupt yet smoothly rising lawn is one of dignity. Consummate boldness of design are here apparent. There is no sense of restriction, no cramping or crowding, but a noble freedom in landscape effect.

From this point we traverse a winding walk which skirts the wood out of which the pleasure grounds have been formed. On the left is the almost precipitous lawn, here and there broken by beds of *Rhododendrons* and now and then a towering Conifer—a *Cryptomeria* or *Araucaria*, which crown this bold bank of verdure. *Cryptomerias* are 40 feet high, *Pinus cephalonica* is still taller, and *P. Strobus* is about 50 feet from the walk to its summit. On the right of this walk the scene is totally different, deep dells of *Rhododendrons* spreading at our feet, affording the visitor a "bird's-eye view" of their rich and undulating masses of foliage and flowers. Passing on the gardenesque gradually merges into the wood; the Conifers are less prominent, but they are good. We find *Sciadopytis verticillata* with its distinct terminal whorls quite a foot in diameter, and excellent specimens of *Pinus lasiocarpa*, *grandis*, &c., relieved by beds of *Acer negundo* and grafted *Acacias*.

We now arrive at a newly formed glade which leads to the crest of the wooded hill, and below stretches Chart Park belonging to the estate. Here is to be noted some noble timber—*Oriental Planes* 70 to 80 feet in height, and Cedars of Lebanon perfectly gigantic. These Cedars alone are worth a long journey to see. Some are straight as ship's masts and as high, others are gaunt and spreading, their trunks girthing from 20 to 35 feet. One venerable monarch has a clear stem of 7 or 8 feet, from which rise a dozen branches, each almost

a tree in itself. This tree seems matchless of its kind. But we must hasten on.

Regaining the summit of the hill we enter a fine avenue of Limes, in the centre of which is a temple ornamented with antique hieroglyphical characters. The view from this temple is splendid. The bold beauty of *Deepdene* here reaches its climax. On one side is the picturesque vale of Sussex, and on the other the "dene"—the great natural dell which has given to the place its name—"Deepdene." The temple is at the head of this dell, and from the place on which we are standing a steep and dangerous-looking flight of three hundred stone steps leads to the grassy chasm below. The body of the dell is a smooth lawn fringed with irregular groups of evergreens, from which rise, like two rows of sentinels, tall thin pyramids of Spruce Fir. In this dell are the caves above mentioned, numerous antique marbles—treasures of old Rome—and other strange relics, amongst which the archaeologist might revel, but which the ordinary gardener can scarcely appreciate. He can, however, appreciate the Bamboo (*Bambusa arundinaria*), growing as if in its Indian home, its hundred canes rising to a height of 15 feet. Here also are fine examples of the "Smoke Tree" or Sumach (*Rhus Cotinus*), and a fine specimen, bearing cones, of *Abies Alberta*. Parallel with this dell, and many feet above it, is a fine contrasting feature—a grove of Beeches, their clean trunks rising from a carpet of dense green moss, a striking change and pleasing.

Nothing has been said of the acres of *Rhododendrons*, which compose the undergrowth of the wood and are the staple evergreens of this fine place. It is not too much to say that there are millions of them in the greatest luxuriance. The seedlings come up thick as grass, and are counted as of little more value than the most common herbage. The soil is sandy loam, rich in vegetable matter by decayed leaves, and rests on a subsoil of greensand—soil which no peat can equal for growing these finest of all evergreens in sumptuous luxuriance.

Nothing has been said of the roseries embowered in the wood, of the thriving young pinetum, and many other points and features of interest. These must be passed over, as also must the kitchen garden and glass structures in one general sentence. The kitchen garden is six acres in extent, is good and well cropped, and the houses are filled with table and other decorative plants; also Vines and Peaches, which produce good crops of fruit. These departments are quite overshadowed by the great natural beauties of *Deepdene*, beauties which are being ever increased by the undoubted high taste of Mrs. Hope and the equally undoubted ability of her gardener, Mr. Burnett.

This is a mere casual glance—a condensed account—of these attractive grounds, which afford scenes which haunt the memory—the lawns, the trees, the mounds, and the striking dells of *Deepdene*.—J. W.

DICKSONIA ANTARCTICA IN TASMANIA.

As a reader of your Journal in Tasmania, I was struck when perusing an article in your issue of June 24th, 1875, upon "Tree Ferns," and could not help noticing the great difference between those grown in England and those growing wild in Tasmania. At the time of reading the article above referred to, I had just returned from a journey into the bush, taken for the purpose of seeing the tree Fern in its natural state. After travelling about twelve miles through a *Mimosa* and *Cassuarina* scrub, we came to the river Piper, crossing which our route lay through a valley which for upwards of a mile was a beautiful natural fernery, in which were many of the commoner varieties of Ferns, principally *Adiantum*, *Blechnum*, *Gleichenia*, *Doodia*, and *Pteris*; scattered about in single specimens and in clumps were to be seen the beautiful *Dicksonia antarctica* with very good effect, as the dark background of the scrub contrasted favourably with the dark brown trunks and their green fronds.

Upon leaving our track we entered a steep-sided gully, and here a grand sight awaited us. We were surrounded on all sides with *Dicksonias*. Upon going higher up the gully where the Ferns had escaped the bush fires, the fronds were so close that we could not see the sky in any direction. We took the dimensions of a few of the larger plants and found them 25 feet high from the ground to the lowest fronds; circumference at 2 feet from the ground 7 feet 4 inches; length of the fronds 12 feet. Many of the large trunks were covered with a small species of *Hymenophyllum* with very transparent fronds giving them a very pretty appearance. There were many old trunks lying upon the ground, which had been

broken down by the falling of trees, but had started to grow again and looked as healthy as any of them. The whole gully was a vast fernery without any of the stiffness which is sometimes seen in the ferneries at home. The Ferns were the picture of health, the foliage of the Dicksonias being much darker than we ever remember seeing it at home.

In two or three instances we saw where the trunks had been thrown across the creeks so as to form a bridge; still even there they were growing again with vigour and looking very pretty indeed, although the settlers do not think so. It seems a great pity for them to be destroyed in such a manner to anyone who has seen them growing in England and knows how they are valued there. The fronds are largely used here for decorative purposes, and are very effective when interspersed with flowers.

From the localities in which the Dicksonias grow in Tasmania we believe they would grow in a cooler temperature than is generally considered necessary at home, for in the winter here they are frequently exposed to frosts.—F. W., *Launceston, Tasmania*.

[The Editors hope that you will favour them with more such interesting notes.]

PEARS AND THEIR CULTURE.—No. 8.

THE conditions under which Pears are cultivated here may be stated as follows:—

SOIL.—A thin, poor, light, ferruginous sandy loam, enriched with heavy dressings of farmyard manure. Sewage is also used occasionally in summer.

CLIMATE.—Judging from five years' experience, and from Mr. Prince's book on the climate of Uckfield, which is really a most valuable and elaborate meteorological record for this district from 1843 to 1870, I may safely venture to assert that the climate is a favourable one. To render the observation really valuable I should add that the position of the fruit garden is an elevated one, well sheltered by trees on all sides, and sloping gently from north to south. It has a thorough and efficient system of drainage, which doubtless has a favourable effect upon the temperature, it having a mean elevation of quite 2' above that of a valley running parallel to its eastern boundary, and about 100 feet below it.

TREES.—The trees are trained in the form of pyramids, palmette verriers, and diagonal cordons. Summer-pruning is practised in moderation—not rigorously, each tree being treated according to its condition and apparent requirements; a very vigorous tree being pruned or pinched two or three times, a less vigorous one perhaps not more than once, and a weakly one not at all. As a rule the shoots are always pruned twice during the season of growth, and the third shoot is suffered to grow unchecked till the beginning of September, when it receives a twist near its base, and is left hanging downwards without being broken off, thus causing the bottom buds to become full and plump without starting into growth, which they would do if the shoot had been cut off.

Let us, even at the risk of repetition, compare the two plans, for the matter is important. By twisting (really crippling) the shoot, and leaving it pendant from its own base, its tissues are so much bruised that the action of the sap in the part suspended is almost, but not quite, stopped; the buds at the base, immediately below the injured (twisted) part receive therefore a proportionate increase of nourishment, causing them to become so strong as to ensure a robust free growth in the following spring. The embryo fruit buds also derive much benefit from this timely concentration of vigour or turning of the tree's resources to the best account. If we continue to pinch off the points of the shoots late in August, we then induce an untimely growth, too late to attain maturity either in size or substance, and I very much fear often giving rise to false alarms concerning the fruit prospects of the ensuing season—at any rate false so far as it concerns the mature growth of well-managed trees.

Nothing can be worse than the results which attend a rigid routine of close-pinching, that stopping of every growing shoot at its second or third leaf which has been so much practised. The effect is really very similar to that which results from the repeated clipping of a hedge. I have seen many a pyramid tree, of which its close compact surface was the exact counterpart of that of a well-kept hedge. Such trees are certainly symmetrical, but they are nothing else. Their utility is almost destroyed, for they yield but little fruit. Now, this faulty practice is most deplorable, because there is not the

slightest necessity for it. Symmetry and utility need not clash. Why, indeed, should they be antagonistic? The sole end and aim of scientific fruit culture is to obtain the greatest possible quantity of fine fruit in a given space. Applied to a pyramid it resolves itself into imparting a symmetrical outline to a cone-like form, consisting of a main stem furnished with branches from its base upwards; not crowded, but far enough apart to give such full play to light and air among the foliage that each branch may become clothed with lateral growths, really spurs, capable of bearing fruit along its entire length. To do this in the best manner training must be resorted to during the earlier stages of the tree's growth. When the trees are numerous this becomes a serious business, making heavy demands upon one's time; but it must receive timely attention, and cannot be ignored. The neglect of a single season when the trees are young will leave its impress upon them as long as they exist. During the training every ligature should be examined during the season of growth. The stem and branches of a robust young tree increase in bulk with such surprising rapidity that a fastening which was quite loose when put on may be found buried in the bark in the course of a month or two.

Root-pruning is in my opinion most beneficial when regarded as a remedy for barrenness. Applied at stated periods indiscriminately it is productive of evil rather than good. Where is the necessity for it when a tree is not rampant and is annually developing more fruit buds? If you want sensational crops on small trees prune the roots, but do not expect very fine fruit or long-lived healthy trees to ensue. It may be advisable when dwarf trees are required for very small gardens; but even in such instances it would be better to plant a lesser number of trees farther apart, and let them become really fine specimens. There is always plenty of room upwards; moreover, you will obtain more and better fruit off one large tree than off half a dozen small trees. Do not let me be misunderstood here. By large I mean trees of 10 or 12 feet high, and with a base of 6 or 8 feet in diameter; by small I mean those absurd scrubs about the size of a respectable Gooseberry bush, or with a stem 4 or 5 feet high, bearing perchance a dozen fruit, and which are sometimes actually exhibited as examples of the effects of root-pruning.

I will now proceed to the description of some of the Pears which have produced enough fruit here to enable me to form a tolerably correct opinion of their respective merits. The list must not by any means be regarded as an exhaustive one of even the most choice kinds, as it comprises only a few of the collection. It possesses, however, an uncommon interest, owing to the fact that none of the trees were planted before 1871, and that a full crop of almost every sort named was obtained last year without root-pruning.

Desiré Cornetis.—This is a comparatively new Pear not yet in general cultivation. The tree was planted in 1871, and is on the Quince stock. The growth is robust, but not very free, somewhat loose and spreading in habit, and is remarkable for its early fertility, having produced some good fruit in 1874 and 1875. The fruit is handsome, large and tapering, very sweet, melting, juicy, and tender—precisely what might be termed a refreshing Pear, and as such is a valuable addition to our September varieties.

Comte de Lamy.—This answers well upon the Quince. The growth is thin but robust, requiring rather close pruning to induce a free lateral growth. The medium-sized pale yellow fruit is not handsome in appearance, but it is perhaps the most delicious of October Pears. White, juicy, melting, tender, of a sweet, rich, and eminently delicious flavour, it is worthy of the highest commendation, and should find a place in every garden.

Doyenné Boussoch.—This answers well as an espalier upon the free stock. The growth is free and robust, but fruit buds have not yet been plentiful. The fruit was almost ripe when gathered on the 4th of last October. It is very large, round, and handsome, with a tinge of crimson on the sunny side. The flesh is white, with a sweet, brisk, and tolerably rich flavour and an agreeable aroma. A fine Pear.

Duchesse d'Orléans.—A handsome pyramid of this on the Quince has a very stout erect growth, upon which spurs cluster thickly. It had a good crop last year. The first gathering was made October 4th, and the last five days later. It was fit for table on the 19th of October. The fruit is large and tapering, something in the way of Marie Louise, with flesh of a yellow tinge, juicy, and sweet, with a piquant acidulous flavour and a delicious aroma. An excellent variety.

Fondante d'Automne.—This is in a thriving condition upon the free stock trained to a west wall. The fine large handsome fruit gathered on October 5th was ripe on the 16th. It has very white flesh of most delicious flavour, and is one of our best October Pears.

Louise Bonne of Jersey.—This well-known Pear is a general favourite, and deservedly so. A pair of fine pyramids on the free stock have exhibited a decided tendency to canker both in the branches and fruit. I am of opinion that the soil has much influence in this matter, and hope to effect a cure by enriching it.

Urbaniste.—This has in four years formed a very handsome pyramid on the Quince. It had an abundant crop of excellent fruit last year, which was gathered from the 4th to the 12th of October, and was ripe on the 25th of that month, continuing in good condition throughout November. The fruit is large, handsome, and of delicious flavour; the rich, juicy, melting, white flesh having that delicate aroma that is so much appreciated by the connoisseur.

Marie Louise.—This fine old sort answers well upon the Quince, but it is, I think, quite superseded by Duchesse d'Orleans.

Suffolk Thorn.—A pair of fine pyramids of this on free stocks had good crops last year. The fruit is sweet, juicy, and has some aroma, but is quite second-rate in flavour. It was ripe on the 22nd of October, and in good condition throughout November.

Doyenné du Comice forms a noble pyramid quickly upon the Quince; its robust free growth is very erect, and has an abundant lateral growth, the thickly clustering spurs being full of promise. Its fine large fruit gathered last year October 16th was quite ripe on November 19th. It is a most delicious Pear, very sweet, rich, melting, and juicy; quite a leading variety among late autumn kinds. It is also doing well on the free stock against a west wall.

Dana's Hovey.—The only tree of this delicious little Pear is an oblique cordon planted in 1864, and was laden with fruit last year. The fruit is small and very handsome, wonderfully juicy and sweet, with an aroma of extraordinary richness. It is a veritable sweetmeat, and its value is all the greater from the fact of its keeping good quite six weeks after it is ripe. Fruit which was gathered on October 25th and was quite ripe on November 29th, was pronounced "most delicious" on January 9th. I should add that the tree is one of the Savbridgeworth "double-worked" specimens, which probably has some influence upon its fertility.

Red Doyenné.—This forms a handsome and most prolific pyramid on the Quince. In my fruit book I find the following entries for 1875:—"Gathered from October 8th to 15th a good crop of handsome fruit, much cracked upon the outer branches. November 2nd ripe, very sweet, rich, juicy, and somewhat crisp; very aromatic. An excellent Pear." "November 6th I have again tasted this Pear, and find it a delicious melting fruit, quite devoid of the crispness which was so perceptible on the 2nd. This shows what a material difference a few days make."

Doyenné Defais.—The fruit of this Pear is very sweet, rich, and melting, with a delicious aroma. A robust pyramid on the Quince planted in 1871 had an abundant crop last year, but quite two-thirds of it were spoiled by cracking. It was gathered at the same time as Red Doyenné, and was a few days longer in coming to maturity.

Beurré Superfin.—The fruit of a vigorous espalier of this on the Pear stock was gathered on October 15th, and was ripe in the first week of November. It is of large size, melting, juicy, and with a singularly rich piquant acid flavour. A most delicious Pear.

Deux Sœurs.—This is also an espalier upon the Pear. The fruit ripening by the end of November was quite third-rate in flavour.

Beurré Clairgeau is growing here in the form of cordons, palmette verriers, and pyramids, on free stocks and on the Quince, answering best upon the free stock. The magnificent fruit is large, long and tapering, of a bright yellow, and beautifully flushed with rosy crimson on the exposed side. It is very sweet, rich, and juicy, and has a delicious aroma. Most of the fruit was gathered on October 12th, and was in excellent condition for table throughout November.

Huyse's Victoria answers well upon the Quince, developing an early tendency to fertility, cropping well both on pyramids and cordons. The fruit has a sweet, piquant, and slightly acidulous flavour, with a pleasant aroma. Gathered on Octo-

ber 19th, it was ripe on November 16th. It is an excellent Pear.

Best Vast.—This is also upon the Quince. Its growth is free, robust, and somewhat spreading in habit. The round and not unhandsome fruit is of medium size. It requires a warm room to bring it to full perfection, and is quite worthy of it, for it is then of delicious flavour, sweet, juicy, and rich, with a slight yet most agreeable acidity, resembling a good Chaumontel, but decidedly superior to it. Last year the crop was gathered on October 12th, the first ripe fruit being fit for table on November 18th. It may be had in good condition till January.

Jewess forms a fine symmetrical pyramid upon the Quince. Its erect growth is stout, and thickly set with spurs. The fruit has flesh of a yellow tinge, very rich, juicy, and delicious. A Pear of the highest excellence. Gathered on October 27th, and ripe in the last week of November.

Milot de Nancy.—The growth of this Pear upon the Quince is of medium strength, erect, and somewhat thinly set with spurs. Its fruit was ripe last season on November 18th, of medium size, sweet, juicy, melting, and with a pleasant brisk acidulous flavour. A valuable Pear.

Comte de Flandre.—This fine Pear is so prolific upon the Quince as to become crippled and stunted when quite young from overbearing if the fruit, which almost invariably sets freely, be not thinned. It is a large pyriform fruit, very sweet, juicy, and melting, but not rich. From its hardness, fertility, and the large size of its handsome fruit it would doubtless prove a profitable sort to grow for market.

Fondante de Malines.—This is upon the free stock. The fruit was gathered on October 19th, and was ripe on November 24th. It was sweet and very juicy, but had very little aroma.

Nouvelle Fulvie.—A handsome pyramid of this upon the Quince is full of promise, the branches are very robust, and are thickly set with spurs. It produced some fruit last year, gathered October 15th and ripe the last week in November. It is large and very delicious, juicy, rich, and melting. A good Pear.

Eyewood.—A couple of fine pyramids of this upon free stocks had a little fine fruit last year, gathered October 19th and ripe throughout November. Very musky in flavour and with much acidity. Quite a second-rate Pear.

Knight's Monarch.—This has formed excellent pyramids both on the Quince and free stock, and, strange to say, those on the free stock were laden with a full crop last year, while upon the Quince there was not half a crop. Much watchfulness and care are necessary as the fruit approaches maturity, some of it being ready to gather long before the others, so that the gathering often extends over an entire month. The process of ripening bears a close resemblance to this, the earliest fruit being ripe early in December, while the latest may not be fit for table till March. Its fruit is of medium size, and when fully ripe is very juicy, melting, and sweet, with a pleasant aroma. A most useful Pear.—EDWARD LUCKEHOUST.

OUR BORDER FLOWERS—DAFFODILS.

"Spring's delights are all reviving," and the time is not far distant when we shall be treated to a grand display of this charming tribe of spring-blooming plants. Daffodils are often met with and greeted with a hearty welcome, but they are not seen in half such numbers as their merits deserve. The Poet's Narcissus, *Narcissus poeticus*, ought to be largely grown about our wilderness scenery and in shrubby borders; but to see Daffodils to perfection we must find the places where they exist by the thousand—I had almost said by the acre—and a sight of that description must be seen to be appreciated. *Narcissus pseudo-Narcissus* so soon cannot soon be forgotten. I have seen a similar plantation of the great double Daffodil, but whether they had been planted or escaped from a garden I am unable to say. They are in a grass field in all their grandeur.

Polyanthus Narcissuses are also most useful, as Soleil d'Or, Baselman Major, and other sorts, not only for pot culture but for garden decoration. They are so accommodating that they thrive in almost any soil and situation we choose to give them, provided we allow them light and moisture. Many of them do us good service both indoors and out, being not only beautiful but sweet. The *Tazetta* or *Polyanthus Narcissus* is said to have reached us from Spain as far back as 1597, and has lost none of its charms from age or change. There are the *Jonquills*,

too, that hold a prominent place in our estimation, being alike useful for in or out-door work. The dwarf *Narcissus Ajax* is also a very attractive border plant. A mixture of sandy loam and peat, well-decomposed vegetable matter, and sand or lime rubbish, will afford them a suitable element to develop themselves in. They may be increased by seed and division after they have matured their growth.—*VERITAS*.

CULTURE OF THE HYDRANGEA.

HYDRANGEAS are amongst the most effective of decorative plants during the spring and early summer months. I allude now to those small plants with large heads that are to be seen in such rare perfection in Covent Garden from April to July. Plants are frequently seen in 5-inch pots having stems about a foot high, and with flower heads fully a foot in diameter. These flowers continue in beauty for several weeks, and are very attractive. These plants are deservedly popular for the adornment of rooms and conservatories, and being of easy culture they should be extensively grown. Such plants as I allude to are produced as follows:—

For early-blooming plants the present is the best time to insert the cuttings, of which you will find an abundance springing up from the base of the plants. I place them singly into thumb-pots, in equal parts of loam and leaf mould with a little sand, and plunge in a gentle bottom heat, where they will soon root, after which they should be placed in a cold frame till they are well established. They should then be repotted into 48-sized pots; pot very firmly, using two parts of loam to one of well-decayed manure, and place them in an exposed situation in the open air, and there let them remain till the autumn frosts out the foliage off. They must then be removed to a cold frame till they are wanted for forcing. When the flower trusses appear the plants must be well supplied with manure water till the flowers begin to show colour.

Plants for blooming later may be provided by inserting the cuttings early in June, when they should be put into small pots and plunged in a close cold frame till they are rooted, when the lights should be removed altogether. They must not be repotted until after Christmas. These will not require nearly so much manure water as the spring-propagated, and they will last in bloom a much longer time. Many gardeners have failures with *Hydrangeas*, which I think is due to the plants not being in an exposed situation during the summer months, which will cause them to become drawn and weakly, and the consequence is when they start them they have nothing but leggy plants and small heads of flowers.—*A. Y.*

[We have inquiries as to changing the colour of the flowers of *Hydrangeas*—having the flowers pink or blue as desired. It has been stated that a solution of alum applied to the roots will change the colour of the flowers, and that a mixture of iron filings in the soil has the same effect. We should be glad to hear from those who have tried these or other experiments with *Hydrangeas*.]

MYRSIPHYLLUM ASPARAGOIDES.

THIS plant is noticed on page 288 as being largely grown in America, and is recommended as one of the best plants that can be grown for affording delicate sprays for associating with cut flowers. The plant and its cultivation is referred to as follows by Mr. Pithian in the American "Gardener's Monthly."

"This beautiful plant, commonly known as *Smilax*, is from the Cape of Good Hope; the word *Myrsiphyllum* means myrrh-scented. It is now used in the cities for decorating, and as affording green sprays for bouquets to such an extent that there is a great demand for it by our city florists.

"It is very easily cultivated, the seed being sown in boxes of light but rich soil in August, and placed in a close and shaded greenhouse. I saw at one time seed sown in two boxes, one box being placed in a close house, the seed in it germinating very well; the other box was put in a hotbed, the heat being 95°; there it remained for eight weeks, only five or six seeds germinating. Supposing the balance of the seed had decayed, the box was taken out of the hotbed and placed with the first box. In less than a week every seed germinated and grew at a rapid rate, the plants soon outstripping those in the first box. When large enough the seedlings should be potted-off in 2-inch pots and placed in a warm house, and kept growing until early spring, when they want a rest, for it must be remembered they belong to the *Lily* family. After gradually

drying place them under the bench, turning the pots on their sides.

"The 1st of August they will begin to show life by throwing up long slender shoots of a light purple colour, and looking somewhat like *Asparagus*. They are now just one year old, and want planting-out or potting. If they are desired for cut flowers by all means plant them out; they are tremendous feeders—requiring plenty of room and water to bring them to perfection. Plant in soil composed of two parts rich manure, two parts good loam, one part old soda, and one part sand. Give plenty of water, never allowing them to become dry; their two greatest enemies are drought and red spider, either of which causes them to drop their leaves, and then they are worthless for cut flowers. Each plant will throw up six or eight shoots, and will need strings to hold them up; twine three or four shoots to one string, and when they have grown to the height of 5 or 6 feet they are ready for market.

"After they are all out dry-off gradually, and give a slight top-dressing of fine but strong manure. Each following year they will increase in value, throwing up more and stronger shoots. While growing they should be often syringed and occasionally watered with liquid manure after being diluted. The second winter from seed they will flower and produce seed. The flowers are greenish white, and very fragrant though small. The berry grows to the size of an English Pea, and when ripe—in August—is a light red colour, containing three or four seeds which are hard and black."

APPLICATION OF MANURE.

I AM glad the above subject has received the notice it deserves. "J. B. K." asks if the manure was used fresh from the stables, or in a half or wholly decayed state. In nearly every instance the manure I used was about half decayed, and I find it better to have it dug into the ground in dry weather.

I intend manuring a plot this spring; one half with old hot-bed manure, and the other with fresh manure from the stable, the whole of which is to be exposed to the atmosphere until a convenient time to dig it in. The result of which experiment I hope to give at a future time.

I have noticed several times where meadows have been top-dressed immediately after the hay was carried off, that it could be seen to a foot where the manure was applied even when there had not been a drop of rain fall on it for weeks after it was spread.

It would be very interesting if we could learn the practice of some of the London market gardeners, or of other large towns, where they cart home fresh manure, whether they prefer using it in a fresh state or in a more decomposed state.—*W. GRAVES.*

NOTES ON VILLA AND SUBURBAN GARDENING.

POTTING PLANTS.—No doubt villa gardeners are often, through being pressed for time, compelled to do their work in a hurry; and in some cases, as in sowing seeds in the open ground, it is not so serious a matter, because if in the morning the soil can be caught in a fit state the seeds may be sown and just roughly covered in, while the finishing part may be left for a day or two longer, and very little, if any, difference will be seen in the crop from those differently treated. In the case above mentioned, and which I know often happens with amateurs, the soil must be raked over before the seeds germinate, or probably some damage would be done to the crop.

In the case of potting plants more or less of this work has to be done at all times in the year, and it is all-important that dryish soil should be used, and the stock of this should be under cover. I do not agree with soil, such as loam and peat for instance, being kept in a warm place until it becomes quite dried up, but moderately dry is what I mean; even dry sand does not work up with a very dry loam so well as one moderately moist. It has been said by experienced gardeners that if when a soil is mixed and some of it pressed tight in the hand, and if when left to itself it suddenly falls to pieces, that it is in a fit state for potting. I think so too, for it will not be too binding when pressed into the pot, and yet it will go close enough together for the roots to become affixed in it.

Now in order to keep the soil as long as possible in that state, the pots must be quite clean at the time of using; if any particles of earth cling to the sides they must be washed out or they will turn the fresh soil sour, and the plants will not thrive. A pot should not be used when wet or damp, because this will cause precisely what we want to avoid—the soil will adhere to the pot and soon become unfit for the roots to grow in; and if at any time it is necessary to turn that plant out of the pot for examination, it will be impossible to do so without tearing most

of the roots to pieces, as much of the soil containing the roots will be left at the sides of the pots.

Good drainage comes next. I dare say it is pretty well understood that drainage must vary in quantity according to the size of the pots and the sort of soil to be used. For instance, if all loam and sand is used there would be no harm in placing more drainage in the pots to take off the water than if lighter soil was used. I ought to mention that pots should be kept clean outside as well as inside, not only for appearance sake but also for the well-being of the plant, especially if that plant is an expensive Camellia, Heath, or Azalea. The pores of the pot should not be stopped up from accumulations of green filth such as are seen on so many pots when they are neglected.

The spring is the time when most potting is done, because most plants have a season's growth before them, and as a rule it is better to keep a plant rather cramped at the roots on the approach of winter, for too much pot room then would involve injury, because the root and branches are in most cases less active at that period than in the summer.

Pruning and potting ought not to be done at the same time. It is safest to prune first; then, when the plant has burst its buds, such as the Fuchsias and most other deciduous plants, then potting may be done, because through the plant breaking into leaf the roots become active and are more capable of taking hold of fresh soil. Softwooded plants such as Calceolarias, Petunias, young Fuchsias, and Cinerarias, often require shifting into a larger pot when no pruning is needed; these are what I call one-season plants. The object is to obtain as large a plant as possible before it flowers; and a pretty sure guide when such plants require pot room and nourishment is when the roots show freely on the surface or at the bottom of the pot. But there is a variation from this rule in the case of the Cineraria or Calceolaria. If large healthy plants are wanted they should not be allowed to show their roots, for this causes the stems to become hard and throw up flowers prematurely. These plants must be turned out of the pots, and if the soil is fairly studded with roots larger pots must be afforded them.

Hardwooded plants of the Azalea, Camellia, Heath, and Myrtle type, which only require potting once a year, should not be potted till after flowering and when a fair amount of fresh growth has been made. In the case of Camellias there is a difference of opinion as to the proper time to pot them. Some say the roots are in the greatest activity when the branches are making growth, and others say it is when the bloom buds are well set, and therefore the potting ought to be done then. I agree with the former opinion. It appears to be against nature to interfere with a plant when it shows signs of fruiting or flowering. I think it is likely to be one cause of the buds dropping so much. Everyone should take the best advice and use their judgment according to the state of the plants.—T. BACOND.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

In most gardens the work of nailing the wall trees will have been finished and the protecting material placed against the walls. There has been much need for it this season, with the Peaches and Nectarines much advanced towards the blooming stage, and Apricots quite in flower. The thermometer has been many degrees below the freezing point for several successive nights. On Sunday the 19th we had 10° of frost, followed by 5° on the Monday, 7° on Tuesday, 9° on Wednesday, and again 7° on Thursday; the wind which had been high previously calmed down as the frost increased, and on the coldest nights there was no wind. Protectors of any light canvas material would mitigate to a large extent the effects of such frosts, and they at least keep the hoar frost from the blossoms; even if the temperature under the canvas differs but little from that in the open the drier atmosphere is so much better for the blossoms. The frost at Loxford has been usually most intense about 7 A.M., and this tells us not to be too hasty in uncovering in the morning. Between 9 and 10 A.M. is quite early enough to roll-up the canvas if the day is fine. It is better to let the covering remain all day if the weather is boisterous. We do not think that any of the blossoms upon trees or bushes in the open ground have suffered from frosts. Fortunately the blossoms are not sufficiently advanced to receive injury.

Some persons recommend the root-pruning of fruit trees in March. Certainly it would then be easy to ascertain the trees that would not blossom, but to root-prune severely at this season would cause too great a check. If the trees had not been root-pruned in the autumn, and there was no chance of a crop of fruit, we would root-prune the trees partially this month, and the work ought not to be delayed.

It was recommended to destroy American blight on Apple trees in the autumn. If some of the insects have survived the dressing given at that time they ought to be destroyed at once. Daub the place where the insects are perceived with a brush dipped in boiled oil.

Gooseberry and Currant bushes are much advanced in leaf and bud. Our friends the sparrows are very active; they may eat some of the flower buds, but they seem to pick quantities only to scatter them on the ground. Perhaps the bullfinch is the most inveterate eater of buds, and notwithstanding his pretty plumage and noble bearing, it is sometimes necessary to wage persistent war against him with the gun.

Many persons do not think of planting their fruit trees until they see them start into growth in the spring, and they fancy that it is the best time to purchase the trees in the nursery. Of course experienced gardeners know better, but many amateurs, and especially those who may just have taken to gardening as a hobby and are very sanguine of producing wonderful results in a short time, need information on this point. It may be as well to state for the information of such that all the best trees are selected in the nurseries before Christmas, and that November or December are the best months in which to plant. Planting may still be done, but the trees will not be likely to make much growth this season.

When the Apple maggot was abundant in the garden here we have taken quicklime and dusted the trees with it at this season of the year, and have fancied that it was destructive to the pest.

ORCHARD HOUSE.

The Peach and Nectarine trees are now in full flower, and under their shelter they are quite safe from frosts. Long-continued cold weather with a cloudy atmosphere is much against the flowers setting. At such a time the heating apparatus comes in with excellent effect.

Brown scale has been troublesome to us for the last few years. The best way to destroy it is to handwash the trees with strong soapy water. This we are now doing.

Strawberries in pots are making good strong growth. The pots are occasionally watered with weak liquid manure water. We picked the first dish of Black Prince on the 21st of the present month. The fruit is large for that variety.

There are colonies of ants in the Pine house where the fruits are ripe and ripening; they make sad havoc with the best fruit. We destroy them by placing a little sugar in their runs; they cluster round it and may then be killed. Pouring boiling water down is instant death to them. They also eat greedily of phosphor paste mixed with sugar.

VINEYERS.

In the earliest houses the fruit has now been thinned-out, and the berries are swelling very rapidly. After this time there is but little tying and training of the shoots required. It is necessary to be very cautious in giving air when keen frost winds are blowing; if the cold air blows directly upon the berries in this early stage of development, probably they will become rusted. We water freely at the roots and maintain a moist growing atmosphere. We have seen others shade their early houses of Vines during scorching hot weather in April and May, and have found it necessary to do so ourselves; but when it is necessary to do this there is not much chance of obtaining first-class fruit, for if the roots are in active growth and the houses have been properly supplied with atmospheric moisture, with sufficient ventilation to induce firm growth, the leaves will not suffer, and the more sunshine they receive the better it is for the Vines.

Late houses are now starting freely, and in the case of Muscats and such sorts as Gros Guillaume, Gros Colman, and Mrs. Pince it is as well to keep up a good temperature, so that the Vines may be pushed on at this season, as it is well to have all the above-named late sorts ripened before the dull cold days of September arrive.

Pot Vines.—These have been repotted and the pots plunged in bottom heat to start them. After the plants begin to grow freely we place the pots on stages, and find that very strong fruiting canes are produced without the aid of bottom heat. The secret of the successful culture of Vines in pots is potting the plants as soon as they require it, and supplying them with a plentiful supply of water when the pots are well filled with roots. They require the same temperature as fruiting Vines—65° to 70° at night with a moist genial atmosphere.

PEACH HOUSE.

In the earliest house the fruits will be going through the stoning period, and it is a great evil to hurry them at this time. The night temperature should range from 55° to 60°. As soon as the fruit takes the second swelling the night temperature may be from 65° to 70°. The trees should be syringed freely about 9 A.M. and when the house is closed in the afternoon, and the water should be applied with some force. Red spider is remarkably fond of the leaves, and if there should be any trace of it when the fruit begins to ripen the leaves will be quite smothered before all the fruit can be gathered. There is no excuse for this, nor will it be so if the water has been applied with sufficient force; it ought to be tepid water. A sufficient quantity for syringing purposes should be always standing in pots over the hot-water pipes. The growths of the trees should be tied down to the trellis as they progress, and we would reiterate former instructions as to thinning out not only the fruit but growths as

well. One Peach to every square foot of trellis is deemed sufficient, and the wood must be fully exposed to light and air. Give the border a thorough watering when the fruit begins to swell, and it will not require more until the crop has been gathered, when the trees may be again well syringed, and if necessary the borders watered.

If there is any trace of green fly in later houses it must be destroyed by fumigating on two or three nights in succession. This pest causes the leaves to curl, and will, if it is not destroyed, prevent the growth of all the shoots on which it is to be found. The safest remedy for mildew is flowers of sulphur. The best way to apply it is to mix a good handful with a small quantity of strong soapy water, and stir the mixture in three gallons of water, with which to syringe the trees. If they have become badly affected a second application may be necessary.

PLANT STOVE AND ORCHID HOUSES.

These structures require considerable watchfulness now. When the sun shines unobscured by clouds it acts with great effect upon the glass, but accompanied with the sunshine may be biting east winds, which would do much injury to tender plants if allowed to blow directly upon them. It is, therefore, often the best way to shade and admit but little air. Although many plants would suffer from sunshine and abundant ventilation others are benefited by it, and it is necessary to make a compromise. The shades ought always to be fixed to rollers, which can be run up or down by pulleys in a moment, and the blinds will not then be left down when they ought to be up. The rule must be to shade only when the sun shines, and to close the houses early in the afternoon, when the temperature may run up to 85° or 90° with sun heat. The nights have been very cold, but it has been a great advantage to close with sun heat; and with a still atmosphere and 10° of frost no more artificial heat is required than is necessary with no frost but a cold wind blowing.

Hardwooded summer-flowering plants are now showing their flower buds, and many of them can endure almost any amount of heat. Ixoras do better with 75° at night until the flowers are expanded; with plenty of moisture in the atmosphere and a little bottom heat they make splendid growth. Bottom heat is not essential to them, nor should it be more than 85° or 90°. Many other occupants of the stove would not thrive, or at least they would not enjoy continuous health, under such circumstances. If the plant stove is large it is most desirable that it should be divided into two compartments, one with a temperature of from 55° to 60°, and the other 10° higher.

Orchids are starting into free growth now, and many of the summer-flowering species are showing flower. In the cool house *Odontoglossum crispum* is always in flower; as soon as the growth is completed the flower spikes throw up. *Masdevallia Harryana* is not only the freest to flower of the species but is singularly regular as to the time of flowering. Our plants show for flower about the end of March, but the flowers do not open until early in June. It is not possible to name any season when it would be best to shift *Odontoglossums*; we generally shift them just before they start into growth. *Masdevallias* are repotted after they have finished flowering. *Epidendrum vitellinum* and the variety *major* are very distinct and useful Orchids for the cool house; we had flower spikes of both last year that lasted in tolerably good condition for three months. The brilliant orange-red flowers are exceedingly effective amongst the more sober tints of *Odontoglossums*.

It is necessary to shade the cool house from sun at this season, as the young growths are easily injured.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY. Shows April 5th, July 5th and September 18th.

WESTMINSTER AQUARIUM. April 12th and 13th, May 10th and 11th, May 30th and 31st, July 5th and 6th.

GLASGOW. May 10th, and September 18th and 19th. Mr. F. Glib. Doughall, 167, Canning Street, Sec.

CRYSTAL PALACE. Flower, May 19th and 20th. Rose, June 16th and 17th.

TYNKERTON. May 24th and 25th. Messrs. A. Payne and J. Mills, Hon. Secs.

MANCHESTER (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.

SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fudge, 89, York Street, Sec.

SOUTH ESSEX (LEYTON?). June 18th. Mr. G. E. Cox, Wilmot Road, Leyton, Sec.

EDINBURGH (Scottish Pansy Society's Show). June 16th. Mr. N. M. Welsh, 1, Waterloo Place, Edinburgh, Sec.

COVENTRY. June 19th. Mr. T. Wilson, 8, Portland Terrace, Sec.

MAIDSTONE (Roses). June 21st. Mr. Hubert Bensted, Roakstow, Maidstone Sec.

FARNHAM AND SOUTH HAMPSHIRE. June 21st. Mr. H. Smith, Sec.

SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.

EXETER (Roses). June 23rd. Mr. T. W. Gray, Hon. Sec.

BRIGGATE (Roses). June 24th. Mr. J. Payne, Treasurer.

LEEDS. June 28th, 29th, and 30th. Mr. James Birkbeck, Delph Lane, Woodhouse, Leeds, Sec.

RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.

FROME (Roses). June 29th. Mr. A. R. Bally Hon. Sec.

MARSDEN. July 1st. Mr. J. H. Edmondson, Hon. Sec.

SOUTHPORT. July 5th, 6th, 7th, and 8th. Mr. E. Martin, Sec.

NEWARK (Roses). July 6th. Mr. F. R. Dohney, Sec.

HELENBURGH (Roses). July 15th and 18th. Mr. J. Mitchell, Sec.

WIMBORO. July 13th and 18th. Mr. P. Appleby, 5, Linden Cottages Hon. Sec.

KILMARNOCK. Roses, July 18th and 19th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.

TOWNSHIP. July 13th. Mr. W. Blair, Hon. Sec.

BRIGHOUSE. July 29th. Messrs. C. Jessop & E. Rawnaley, Hon. Secs.

HEWORTH (Horticultural). August 2nd. Mr. B. H. Felton, Hon. Sec.

CLAY CROSS. August 15th. Mr. J. Stallard, Clay Cross, near Chesterfield, Sec.

WESTON-SUPER-MARE. August 15th and 16th. Mr. W. B. Frampton, Sec.

PRESTON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.

SHERWELBY. August 16th and 17th. Adnits & Naunton, Hon. Secs.

TAUNTON DEANE. August 17th. Mr. F. H. Woodford, M.D., and Mr. Clement Smith, Hon. Secs.

MIRFIELD HORTICULTURAL. August 19th. Mr. George Senior and Mr. John Rushforth, Hon. Secs.

RAMSAY (ISLE OF THANET). August 23rd. Mr. R. R. Schartan, Broad-Street BURN. August 26th. Mr. R. Richardson and Mr. W. Elliott, Secs.

DUNDEE (International). September 7th, 8th, and 9th. Mr. W. R. McKelvie, 26, Euclid Crescent, Sec.

TRADE CATALOGUES RECEIVED.

James Vick, Rochester, N.Y.—*Illustrated Floral Guide*.
Thomas S. Ware, Hale Farm Nurseries, Tottenham.—*Spring Catalogue of Border Plants and Florists' Flowers*.

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (S. E.).—Our "Flower Garden Manual" and "Kitchen Garden Manual." You can have them post free if you enclose ten postage stamps with your address.

WILD VIOLETS (E. D. B.).—The yellow flowers are those of *Viola lutea*, common in Somersetshire. The purple flower is the common *Viola odorata*, rather darker in colour than usual, which is not uncommon when the plants are highly cultivated.

CLIMBER NOT FLOWERING (W. W.).—We believe it is *Lapageria rosea*, but no one could be certain from only seeing two dead leaves and 8 inches of an unripe shoot. Growing as you state it does in the shaded part of the greenhouse, and overmoist from the constant dripping of the water-tap, sufficient account for its being flowerless. More light and less water would cause it to flower.

MARSHAL NIEL ROSE STEM SPOTTED (Mrs. G.).—The black spot upon the stem of the shoot sent is, we think, a result of the syringing, which from the moisture resting in drops upon the stem causes a disorganisation of the tissues, resulting in the parts so subjected being blacked. The only remedy is to admit air more freely and not feed so highly; the plant, we should think from the foliage, being very luxuriant.

CAMELLIA NOT FLOWERING (P. H. E.).—Camellias require light, but with shade for the foliage from scorching sun in summer. Your plant you say is "planted out in loam and peat under a large tree Fern," and we apprehend that both plants are in the same border. The shade of the Fern, and that also under a shaded roof, is too dense for the Camellia, and the border will for a tree Fern be in such a state as to be mud for Camellias. Either you must find a more suitable position for the Camellia or put up with its fewness of flower buds and their drooping.

FURNACE FOR GREENHOUSE (O. Jones).—The furnace should be 2 feet long, 1 foot wide, and 1 foot high, or four courses of bricks, and arched over, which will give about one-third greater height in the centre. The furnace door will with its frame require to be 1 foot square, the door being, of course, less by the size of the frame. The ashpit should be 1 foot wide and deep, and should have a door to regulate the draught. The furnace must be square, not rounded; but the flue may be rounded at the angles, keeping the same width as if the flue were square. The flue from the furnace should have a clear rise of at least two-thirds the depth of the furnace, the bottom of the flue to be 9 inches above the furnace bars.

ERYTHROXYLON COCA (W. J. P.).—*Erythroxylon* are tropical trees or shrubs of no particular beauty. They are chiefly found in South America, also in the Mauritius and Madagascar. Dr. Hogg in his "Vegetable Kingdom" states that the wood of some of the species is of a reddish tinge, hence the name of the tree from *erythros*, red, and *xylon*, wood; and that "the leaves of *E. coca* are masticated with the seed of *Chenopodium quinoa*, and are said to stimulate the nervous system in the same way as opium, all the effects of which the coca possesses in a high degree." The plant is reputed to be extensively used by the miners of Peru for its stimulating properties.

ROSES (T. F., Bridgnorth).—Answer next week.

PLANTING HOLLY (Sussex).—It may be done in midsummer, but the best time for moving large Hollies is about the third week in August.

PHELARGIUM QUEEN VICTORIA (T. O.).—This is neither a "show" nor a "fancy" variety as generally included in these terms. It is a escaped-petalled,

semi-double, free-blooming variety of great value for decorative purposes. The colour is vermilion with maroon blotches on the upper petals, all the petals being margined with white. It flowers early, and will no doubt force well, and is fine for decorative purposes in the conservatory and greenhouse.

BROCCOLI AND CAULIFLOWERS FOR SUCCESSION (H. M.).—Snow's Winter White is ready for use in January, Adams's Early White in February, Knight's Protecting in March and April, Lauder's Goshen and Cattell's Eclipse in May and June. Sow early in April, except the two last-named, which may be sown in May. Of Cauliflowers sow Dwarf Mammoth, Walcheren, and Velsh's Autumn Giant at once, and Walcheren at intervals of three weeks until July, and if you afford the plants rich soil and copious supplies of water you will have a lengthy and full supply.

CELERY RUNNING TO SEED (Idem).—The cause of your Celery "bolting" was not the fault of the seedman. The seed was sown too early, receiving subsequent checks to their steady growth; the plants suffering also, in all probability, by insufficient supplies of water some time during the summer season. If you carefully follow the mode of culture detailed on pages 216 and 266 you will have few, if any, bolted heads.

DIPLODENIA BRABLEYANA (Exhibitor).—You have been correctly informed that this variety is one of the finest of *Dipladenias*. Its flowers are the richest in colour of all the varieties, being bright crimson, and the petals are of stout texture, and the plant is also a free grower and profuse bloomer. It has been awarded a first-class certificate by the Floral Committee of the Royal Horticultural Society, and is worthy of your special notice.

DISBUDDING VINES (F. H.).—When the bunches show you can make a selection of the shoots of the greatest promise, and when a doubt arises as to which of two shoots should be removed, decide on leaving the one nearest to the old stem of the Vine. The shoots should not be left closer than 15 inches to each other, so that the foliage can have room to expand fully. Great injury is commonly done by an overcrowding of the young shoots.

SYRINGING VINES (Tyro).—A moist atmosphere arising from a regular sprinkling of the paths is preferable to syringing the Vines with water of "questionable" purity. See what is said in another column by "EX-EXHIBITOR."

APPEALING PATH IN CONSERVATORY (F. O. M.).—There would be great danger to all softwooded plants by using hot tar under glass. The only time which would be at all safe to make a path of the kind you contemplate would be in summer, when most of the plants could be placed out of doors for a time, and the ventilators of the house be left open night and day for three weeks. Even then we do not consider the use of tar advisable. Cannot you make a firm smooth path by using a mixture of cement with the surface covering of gravel?

SEED MEASURES (Country).—All ought to be sold by imperial measure. To sell by any other renders the vendor liable to a penalty of 40s.

BOES ON OWN ROOTS (E. T.).—Allow them to grow this year as will, not pruning them until the coming February, and then prune rather freely, and so as to form bushes; but you may have them in any desired form, but for standards they are not well adapted, doing better as bushes.

SOWING ROYAL FERN SPORES (Wills).—The proper name of the Fern is *Osmunda regalis*, a native kind, found in swampy ground. It requires a wet soil, with plenty of light, but shaded from direct sun. The spores should be sown or scattered on the surface of a pot or pan prepared as follows: Drain it well, filling one-third its depth with crocks, over this about an inch of the sittings of the compost, two-thirds sandy peat, and one-third fibrous yellow loam, with a sixth part of silver sand. The pot or pan is then to be filled with the sifted soil to within an inch of the rim, pressed rather firmly, and made smooth and even; thorough watering should be given, and whilst the surface is wet the spores should be disposed over the surface, and the pot or pan have a square of glass laid upon it. The pot or pan is to be placed in a manner kept full of water, and placed in a house from which frost is excluded, and in a position shaded from the sun. You may place in the hotbed, and keep in the dampest part and shaded. The seedlings will sooner appear in the hotbed—probably in about six weeks, and under cooler treatment in about eight or ten. The surface of the soil is to be always kept moist, and if the saucer be kept full of water it will hardly be necessary to water at the surface. A little air may be given after the seedlings are well up, but only a little, and at night, by degrees inuring them to exposure. The seedlings will not require potting-off singly until this time twelve months, and ought to be grown-on for a year in a cool moist house before planting them out.

TAN HOTBED FOR CUCUMBERS (St. Edmund).—The south-east corner of your garden would answer in summer for a Cucumber frame; but it certainly cannot now have the sun at 7 A.M., with an 18-feet-high building to the east much before noon. If it have sun at 7 A.M. the site is a good one, the sun continuing upon the frame all day. Tan will answer; but you will need to have a pile of straw or bricks or other means of holding the tan, or you might use litter for the sides of the bed, and fill-in with tan.

SOWING SEVILLE LONGPOD BEAN FOR USE IN JULY (Idem).—Sow at once. They will not be in before required, if by then.

OPHYRS ALTERNIFOLIUS VARIEGATA (John E. Boyd).—Its green foliage is from the plant being grown in too free rich soil; and it is as well to state that the variegated kind is only a sport from the green, and is very subject to revert to the original form. Great care should be taken in selecting for an increase of stock those divisions of the plant which have the highest variegation, and to grow in very poor soil. We grow ours in silver sand with a fourth of crocks broken small, and a sixth part of sandy peat. The pots are well drained, and the plants are abundantly watered and afforded a light position in a cool stove. We have very many seedlings in our stove, which are all green-foliated, and very pretty they are for decorative purposes, even more so than the variegated kind for table purposes.

ARDEIA ORNULATA NOT FRUITING (Idem).—The plants must drop the flowers, but as they are doing so without setting we can only suppose that they are grown in too moist and close an atmosphere. Our always set freely though sprinkled overhead twice daily. We grow the plants in a cool stove in a light airy position.

WATERING MUSHROOM BED (Idem).—We approve of watering Mushroom beds at any time when the surface is dry and requires watering to bring it into a moist condition; but it is not good practice to water with a moist surface and the Mushrooms rising freely, as it is certain to destroy those in the bottom state. All watering of Mushroom beds should be done as much as possible without wetting the Mushrooms, at the same time the surface must be kept moist. Why water when the bed is moist? You have over-watered, and lost the crop for a time.

GROWING BUSH FRUITS (F. O.).—It would no doubt afford a respectable livelihood to devote two or three acres of ground to bush fruit culture; but you would not obtain the profits you anticipate, as one-half the sum you name would be a more likely result. Hens kept in numbers do not pay, but you might have poultry if you had runs for them, independent of the fruit garden, and add a nice sum to your other sources of income; but from the fruit garden they had better be excluded.

CLIPPING HOLLY HEDGES (J. W.).—Do the clipping now.

NAME OF FRUIT (A. B. C.).—Kedleston Pippin.

NAMES OF PLANTS (H. N. D.).—It is usually called *Pyrus japonica*, but it has also been included in the genera *Odynda*, *Malus*, and *Oncoceras*, but never in *Camellia*. (*W. D. A.*)—*Frimula verticillata*. (*O. B. C.*)—2, *Corastium Blehersteinii*, or robust sprays of *C. tomentosum*; 3, *Achillea umbellata*; 4, *Clinocaria maritima compacta*.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY JOTTINGS.

"Now is the winter of our discontent"

truly a long one; and although variety is said to be charming, and we pass from rain to snow and snow to sleet, accompanied by hurricanes from the south-west, varied with straight, keen, cutting, relentless east winds, yet we confess we are not charmed. We have read somewhere that Sheridan went on a visit when it was convenient if not necessary he should be anywhere but at home. He pitched on an old friend who had a capital cellar and a first-rate cook, but who was decidedly prosy and a bore. He had one invariable rule—he never left his bed while the wind was in the east. His bedroom had a weathercock in front of the windows. On the night of his arrival Sherry tied it due east, and left it there till he had letters allowing him to return home. We do believe there was wisdom in the man's arrangement. Bed is the only place of secure refuge from the east wind. Clothing will not keep it out. It finds out the worn places of your clothes, and perseveres till it has reached the skin, and there it fastens; and it comes in all its strength, having formed an alliance with "blackthorn winter," and reigns supreme for five, six, or more weeks at this season of the year. There are certain things that never come at the right time. Bills do not. If they had come two months earlier you were in funds, and two months later you could pay them; but just now —

Well, we should not mind if the east wind came in July or August. The adults would be moulting, and the chickens would be well clothed and able to stand anything; but to come now, it turns the scale against us. We like to hatch January chickens. About this time they are sturdy little fellows. We are obliged to keep them in a large outhouse for the first two months. The nights are too long and the weather is too cold, and in a house there are facilities for nocturnal feeding that cannot be met with out of doors. We trust in those two months to get them strong enough for anything; to be out of doors, to face the cold winds, the morning frosts, and the April showers. But this is the winter of our discontent. None of our chickens are yet out of doors. The earth is so damp, so cold, we dare not risk them. The time is, however, come when we must; others are growing, and some are hatching every day. It is the history of everything else. Elders must make way for youngsters, so the chickens shall take to the grass that their younger brethren may have shelter. We have not much fear; we have two places, one a close thorn hedge with large dry bank. We drive the rip into the hedge as far as we can. It is thus protected from everything, and standing on a slant it is always dry; it is also very dusty. But our favourite place for chickens is under a hayrick. In such a place about 21 feet square there are generally two hayricks; one entire, the other partly consumed. We know no such place for chickens. It affords ample shelter from everything, it is always dry under its eaves, the ground is covered with seeds and food of all sorts. Dust made up of the most minute particles abounds. Nothing is more essential to the well-doing of chickens than this. Unlike many birds, it is not in the nature of a fowl to wash, but they must not the less have their bath, and the material they use is dust. We jot down as we go on. The most successful breeders we have ever known have been those who have most closely followed Nature in providing for the wants of their birds, whether in food or otherwise.

IN RE DUST BATH.

"There's a covey of eleven in the tater field," said the keeper. The dog drew to a bare spot and stood some yards from it. It was open and exposed to the sun. When approached the dust baths were visible, the earth was pulverised, and feathers lay here and there. A little farther and the birds rose, scattering clouds of dust. "I know there are Pheasants here." It was a high bank separating a covert from a common. The dog drew steadily down, and at last stood. As he continued drawing the keeper walked by his side, and then pointing to the top of the bank, said, "See where they've been dusting! Cook and hen feathers both!" They were put up in ten minutes. These birds, following the all-wise instinct implanted in them, were taking their dust bath. Vermin destroy birds little by little; dust is

the cure. Just as a stream that crosses a road, trickling from one ditch to another, may be seen full of small birds—Sparrows, Robins, and Finches, all engaged in thorough bathing, so those birds that do not wash take to dust. There are difficulties in poultry-keeping that were unknown in past years. Take, for instance, that which was christened by one of our oldest poultry judges and breeders as "elephantiasis." Who is there keeping poultry on a large scale who is not plagued with it? Birds otherwise faultless look as if their legs were coated with the roughest of oyster shells. Take, again, the abominable habit of feather-eating. It is becoming the bane of many yards. We cannot help asking ourselves, What is the origin of these things? It leads us back many years. Poultry was formerly kept in the home counties—Kent, Surrey, and Sussex—for the supply of the London markets. It was always at liberty, and all fowls were reared naturally. Then the subject grew into importance, and everyone took to keeping it. Shows were instituted. Large prices were realised. Those with room for one breed kept four. Queries sprang from all quarters asking advice, and above all seeking to know by what means a pen 18 feet square might be made to do the work of a run of 10 acres. Much has been done; but there remains always the Nemesis—if unnatural food and treatment are adopted, then unnatural disease will appear. They have done so, what is the remedy?

It must be recollected that we breed our fowls out of due course and in an artificial state. Our aim must then be to supply them as nearly as possible with that they get in a state of nature. Fresh earth in which they may scratch and find the numberless atoms invisible to us, but which they eagerly pick up. They must have green food. The weeds and refuse of a garden may here be made useful. Fowls, like human beings, want not only food but amusement. Let a barrowload of garden refuse and sweepings be thrown into the middle of a limited run. Every bird will go to work. They will scratch it all over the place, and will find not only food but medicine if they require it. This employment keeps them out of mischief, and the rubbish is none the worse for manure after they have analysed it. Do not use any food to induce fowls to lay. Use no concentrated or stimulating foods. Do not overfeed. Fowls are subject to the same disorders arising from improper diet as human beings, and where the natural appetite is destroyed an unnatural craving takes its place. Do not give much food at a time. So far as may be let your birds feed as Pheasants and Partridges do: let them seek their food and pick it a grain at a time. Where you find you have one breed more than you can keep well, do away with it.

Like ourselves, you will have to put your chickens out. Choose them if you can a sheltered spot. Let the front of the rip be securely fastened at night with a board in front. Spite of the wind let the rip face the east, and when the morning sun shines let them have the full benefit of it. In the management of your poultry study Nature more than men or books, and when (as you assuredly will) you have learned from her follow her teaching implicitly, and you will find it the road to success.—DUX.

Egg in Egg.—A pullet in my possession laid a large egg weighing about 4 ozs., which on being opened was found to contain another ordinary-sized egg with the shell quite perfect; the large egg in which the smaller one was enclosed being all white with no yolk, while the smaller one had the yolk and white of an ordinary size. Has this often occurred, or has anything of the kind ever come under your notice?—A SUBSCRIBER.

[It is not uncommon for a small egg perfectly shelled to be found within a large egg, but it is unusual for the small egg to contain the yolk.]

CAGE BIRDS AND THE FOOD THEY EAT.

No. 2.

My former article ended with the words "the use of canary seed," repeating which Mr. Hervieux, in his work published more than a century and a half ago, seemed to attach little importance to the use of it compared to other kinds; for he says, "I have only a little pinch given them sometimes," and he likewise asserts that "many curious persons never give their birds any of it."

Now, so far as the use or utility of canary seed is concerned, I must say that for more than a quarter of a century I have from time to time, when they were at about the ages of five or six weeks old, weaned my young broods of Canaries from egg and other soft food with a greater certainty of success with the entire use of canary seed than I ever could when using either rapeseed or hempseed. The two latter seeds, from their rich and oily constituents, had a tendency to disorder the digestions of the birds or turn them "soft," which term is understood by the fancy. Thus my experience has induced me to regard canary seed as the staple food for bringing young birds to maturity.

Mr. Hervieux says rapeseed is the "most necessary seed for feeding Canary birds." But there is a danger attending the use of rapeseed unless the proper sort is obtained, which is smaller

and of a lighter or purple tint, and sweeter compared to many kinds of mixed seeds sold as bird rapeseed. Millet seed next claims the writer's attention, for he says that three kinds of seeds—rape, millet, and hemp—are "absolutely necessary, especially the two first of them, so that they [Canaries] may live very well without the others, which are not proper for them, otherwise than to recover their stomach when they have lost it, or to help them in some distempers" spoken of in his treatise. Remarking further upon the three kinds of seeds above named he says they "are to Canary birds as bread, wine, and flesh are to men; for a man who has those three sorts of sustenance may live long and in health without the help of any others which are called the dainties of life, and which often rather impair than preserve health." It is evident that the writer believed in the uses of wine and was no vegetarian. But I will quote the other kinds of seeds Mr. Hervieux names as of service to Canaries and other small cage birds.

"Pink Seed."—The best comes from Strasburg, as has been found by experience, that which grows about Paris losing its taste. It blossoms about May and June. Its quality is astringent, and therefore it is given to Canary birds that are loose; the taste of it is sweetish. Take heed when you buy this seed that they do not instead of it give you poppy seed, which is very like it, and will infallibly kill your Canary birds. All the difference is that poppy seed is blackish and the other grey." Fanciers will recognise the seed known by them as mawseed as being none other than "pink seed."

"Lettice seed" is well known as well as the lettuce. It is flat, long, and of a bright grey. Its quality is cooling, wherefore it is now and then given to Canary birds to purge them."

"Silverweed" [Tansy seed] is a plant whose leaves are like those of coriander, but somewhat more oily, and the stem is like that of rue. It is called Silverweed because the leaf is white, but the seed is red and very small. In Latin it is called *Thalictrum*. Its quality is to bind the Canary birds that can eat it, which many of them will not." It is put to other uses not spoken of here.

"Plantain seed" comes from a plant of the same name, which grows like an ear of wheat and is small and blackish. Its quality is nourishing and warming, but it is very seldom given to Canary birds."

The before-mentioned seeds are all Mr. Hervieux names, which is somewhat surprising considering the utility of flaxseed to many small cage birds, especially Goldfinches and Linnets. Like the plantain seed there are others which grow wild and may be given with beneficial effects to birds—such, for instance, as shepherd's purse and thistle seed, which latter sort Goldfinches are particularly fond of. At the end of the summer, or at the particular period of the ripening of thistle seed, numerous Goldfinches may be found diving their suitably-formed beaks into the heads of the thistle in the localities where it grows.

The high price canary seed has realised for some time past must at the commencement of the canary-seed panic have placed many fanciers at their wit's end to find a substitute for it. None better could have been found than the use of millet, which partakes more of the properties of canary seed than any other kind. But our forefathers must also have been subject to the ups and downs of the seed market. At the time Mr. Hervieux wrote his book he names the period as being a "dear year" for seeds; and two important considerations appear to have been that of the quality and value of the seeds given to birds, and likewise that they should be well "fanned and cleansed before they are used, because they are generally very foul and full of little stones and dust." This is a necessary precaution to take, and fanciers should well sieve their seed before giving it to the birds.

The writer further states, "The price of each sort alters every year according to the plenty or scarcity of it. What I shall set down here is rather to give curious persons some notion of the value of the several seeds," and then names the prices for which they were then sold as follows—"A boisseau of rapeseed, which is about a peck and a half English, or 20 lbs. weight, 45 sols; a boisseau of millet, 80 sols; hemp, 22 sols; a litron of canary, being somewhat above a pint English, 8 sols 6 deniers; a litron of pink seed, 18 sols; lettuce seed, 9 sols; silverweed seed, 28 sols; plantain seed, 15 sols." In conclusion Mr. Hervieux says, "By what I have said you may perceive that a litron, or pint of the last five sorts of seeds, will serve you as long as a boisseau or peck of the three first [rape, millet, and hemp] being given to the birds only in cases of absolute necessity. There are also many curious persons who never make use of all the sorts of seeds I have mentioned, which did not, however, divert me from setting them down for the satisfaction of those who do or may hereafter use them."—Geo. J. BARNSBY.

THE SEVERITY OF THE SEASON.

NOTICE has already been taken in the Journal of the protracted unfavourable weather for bees. Both February and March this year have been filled or fully taken up with unpropitious weather. During these months the bees at Sale have been kept indoors by weather unusually and excessively cold

and stormy for spring months. The budding hawthorn hedges, rose and gooseberry bushes, have been nipped and blackened by the cold winds within the last few days. Ladies and gentlemen are still wrapped up in their winter clothing whenever they leave their firesides. We have had of late years some unfavourable springs for bees, but we do not remember one—and we do not think we have had one—during the last fifty years so constantly cold and unfavourable for bees as the present one.

On examining my stocks the other day I found that those of them which had been taken to the moors last year are in a much better condition than those which remained at home. This is not usually the case, for the work on the moors is very destructive of bee life. The amount of work done by bees on the heather is often marvellous, but it is done sometimes at a fearful cost of life. "But how do you account for the moorland hives being so comparatively populous this spring?" Well, last autumn was an unfavourable one for bees not taken to the heather. They ceased to set eggs and multiply numbers very early. The last batch and hatch of brood is rapidly dying off now by reason of old age. The hives on the moors began to breed again about the middle of August, and doubtless their superiority in numbers now is owing to their breeding later last year. If the spring months this year had been favourable for breeding all the hives would have had two hatches of brood perfected by this time (March 27th), and been replenished with young bees, and thus renewed for a renewal of activities of all kinds.

I have two sugar-fed hives in splendid condition. In the month of September last year I put 5 lbs. of bees and a queen into an empty 18-inch hive, and 4 lbs. of bees into a 16-inch one. These had about 15 or 18 lbs. of sugar each rather rapidly. I should say about 2 lbs. of sugar (nearly 4 lbs. of syrup) each every evening. The bees quickly built combs, and as rapidly filled them with brood. The bees bred so late in the season will live till May, and bees fed on sugar and water are generally very healthful during winter and spring. The hives were about two-thirds filled with combs, and had the swarms been one-third larger when they were put into the empty hives they would have filled them with combs. We invariably find that sugar-fed stocks do well; their combs being young, sweet, and clean, bees thrive and multiply exceedingly amongst them. I expect that the question of creating stocks in autumn by artificial treatment and feeding will be very fully considered as soon as apiarists have remodelled their hives and are satisfied with them as to shape and size. I have often seen hives of proper capacity become too heavy for stocks in good seasons, and if two or three pounds' worth of honey can be obtained from a hive in autumn, why keep it for a stock? The bees of the hive may be easily driven into an empty one and therein fed. From five shillings or six shillings' worth of sugar a good swarm would furnish its hive with combs and food enough for the winter and spring months. Stocks thus formed cannot well be surpassed for excellence; but the pounds, shillings, and pence derived from this mode of procedure will probably tempt many bee-farmers to follow it.

Those who have weak hives at present cannot do better than take the advice given by "B. & W." last week—to feed the bees pretty constantly and keep the hives warmly covered.—A. PATTICREW.

OUR LETTER BOX.

HEM PROBED BY COCK (H. R. P.).—Your Houdan cock does not like the hen less, but he likes her feathers more. These irregularities do not occur where fowls have their liberty and have plenty of natural food; but when they are shut-up, and too often fed on stimulating foods to induce laying, it causes a vitiated appetite, an unnatural craving, and it would seem that feathers approach most nearly to that which they lust after. We have our own opinion founded on close observation, and it is that the destruction of the plumage is only preparatory to an attack on the flesh. We keep almost every breed largely. Our first experience was with Crève-Cœur. We had some in confinement. Rather later than this they began to eat their feathers, and in a month (we left them to themselves on purpose) they had only wing and tail feathers. The next year the Houdans indulged in the same luxury. The next year the Spanish most determinedly set to work at the feathers, and then the flesh. We consigned the birds to darkness, giving them light only to feed. We released them from their gloom at the moulting season, and they moulted well in confinement. Our present experience is with three pens of Spanish. We have had to remove four birds, because we found they were becoming naked under the throat and on the neck. The only cure we know is to give the birds their liberty. They then find that of which they stand in need, and becoming satisfied the unnatural craving ceases. There is no cure for it as long as they are shut-up together, and it will run through the whole pen. It may be lessened by giving them earth fresh dug with grass and worms in it, and by giving lettuce. We repeat we keep almost every breed. We have known this habit with Spanish, Crève-Cœur, and Houdans. None of the others have had it with us.

EGGS THIN-SHELLED (W. M. G.).—Your description of your poultry run would prepare us for failure. Much of the health of a fowl depends on the scratch. Insect life and particles unseen by us are turned up with every scratch. We have often wondered, and perhaps you have done the same, when we have seen the vigorous scratch given alternately with each leg, and the busy pecking that immediately follows. They thus find that which keeps their bodies in health and tends to make them prolific. We are enemies to artificial heat. The material for the shell of the egg must be supplied to the birds, and nothing is better than bricklayer's rubbish. This will improve the

shells and make them harder and thicker. If with these appliances the shells are still thin, then the birds are not in condition. Give them daily some large sods of growing grass cut with plenty of earth. If you can give them a barrowful of road grit do so.

SPANISH COCK'S FACI EXCRESCENCE (A. E.).—There is no cure, as it must end in blindness, and is the penalty paid for excess of merit. The only possible treatment is to strap-back the excrescence with sticking plaster above and below.

BIRD DYING SUDDENLY (E. R. M.).—Apparently it died from cramp, and if so from being exposed to cold. Not knowing where it was kept or on what it was fed, we cannot give a decided opinion.

CANKER IN YOUNG PIGEONS (J. O.).—There is believed to be no cure for canker in young Pigeons in the nest. As you have bred nothing but cankered Pigeons, and as many as seven pairs so diseased from one pair of birds, we should advise your destroying the old pair, as they must be hopelessly of bad constitution.

HONEY MOTHS (J. B.).—If your hive is full of bees as you say, the moth will not do much harm. Use a little smoke to keep the bees quiet, turn up the hive and brush off all the woolly-like nest you may find on the board or sides of the hive, and if any are among the combs pick them out with a knitting-needle. Your hive will prosper and do well.

METEOROLOGICAL OBSERVATIONS.

GARDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain.
1876.	Barom. at Sea and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
March.		Dry.	Wet.			Max.	Min.	In sun.	On grass		
We. 22	29.896	deg.	deg.	E.	deg.	deg.	deg.	deg.	deg.		
Th. 23	29.893	57.7	84.0	N.	56.4	45.0	58.4	58.4	58.4	0.010	
Fr. 24	29.895	59.3	84.0	S.W.	56.6	47.5	59.0	58.5	58.4	—	
Sat. 25	29.877	48.4	81.6	N.E.	57.6	52.0	59.4	58.4	58.4	—	
Sun. 26	29.811	58.0	84.6	E.	58.3	53.1	54.4	57.5	58.4	0.010	
Mo. 27	29.446	58.0	84.8	N.N.E.	58.4	41.1	54.4	56.5	51.0	0.498	
Tu. 28	29.334	50.3	82.0	S.	59.0	41.3	53.9	55.8	53.3	0.018	
Means	29.687	40.7	83.1		58.0	48.1	52.1	50.6	59.7	0.510	

REMARKS.

22nd.—Deep snow in the morning, but very bright at 9 A.M.; heavy snow at 2 P.M., and at times till 4 P.M.; afterwards fine but cold.
23rd.—Beautiful morning, fine all the early part of the day; less bright after 2 P.M., but fair all day.
24th.—Slight white frost in morning; fine at noon, snow not quite gone; a very pleasant day, more spring-like than we have had for some time.
25th.—Bright in the morning; rather cloudy about 2 P.M., but fair all day; the wind rather cold.
26th.—Fair but dull and cold in the morning; a slight gleam of sun about 1 P.M., but a dull day.
27th.—Dull and cold in the forepart of the day; wet evening, and very wet night, and early morning.
28th.—A beautiful day, bright and warm; rather wet in the evening.
Average temperature about the same as that of the week before last. Very cold night on 22nd and 23rd.—G. J. STOKES.

COVENT GARDEN MARKET.—MARCH 29.

A good supply of early vegetables is now arriving from the Continent, consisting of Asparagus, Peas, new Carrots, new Potatoes, Artichokes, and salad-ing, all of which are realizing fair prices. Among English produce Cucumbers are far in excess of the demand, and French Beans do not maintain the prices of last week. Business generally is quiet.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	0	8	Malberries.....	lb.	0	0	0
Apricots.....	dozen	0	0	0	Nectarines.....	dozen	0	0	0
Cherries.....	lb.	0	0	0	Oranges.....	dozen	6	0	12
Chestnuts.....	bushel	13	0	0	Peaches.....	dozen	0	0	0
Currants.....	1	0	0	0	Pears, kitchen.....	dozen	0	0	0
Black.....	do.	0	0	0	dessert.....	dozen	8	0	12
Figs.....	dozen	0	0	0	Pine Apples.....	lb.	1	6	4
Filberts.....	lb.	0	6	0	Pineapples.....	dozen	0	0	0
Gobs.....	lb.	0	6	0	Quinces.....	bushel	0	0	0
Gooseberries.....	quart	1	0	0	Raspberries.....	dozen	0	0	0
Grapes, both home.....	lb.	10	0	0	Strawberries.....	dozen	1	6	0
Lemons.....	dozen	10	0	0	Walnuts.....	bushel	4	0	10
Melons.....	each	0	0	0	ditto.....	dozen	1	6	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	6	0	0	Leeks.....	bunch	0	0	0
Asparagus.....	dozen	6	0	0	Mushrooms.....	pottle	1	0	0
French.....	dozen	6	0	0	Mustard & Cress.....	punnet	0	0	0
Beans, Kidney.....	dozen	1	0	0	Onions.....	bushel	2	0	0
Beet, Red.....	dozen	1	0	0	pickling.....	quart	0	0	0
Broccoli.....	dozen	0	0	0	Parley.....	dozen	2	0	0
Brussels Sprouts.....	dozen	2	0	0	Parsnips.....	dozen	0	0	0
Cabbages.....	dozen	1	0	0	Peas.....	quart	0	0	0
Carrots.....	bunch	0	0	0	Potatoes.....	bushel	2	0	0
Cauliflowers.....	dozen	1	0	0	Kidney.....	dozen	0	0	0
Celery.....	bunch	1	0	0	New.....	lb.	1	6	0
Coleworts.....	dozen	2	0	0	Radishes.....	dozen	0	0	0
Cucumbers.....	each	0	0	0	Rhubarb.....	bunch	0	0	0
Endive.....	bunch	0	0	0	Salsify.....	bunch	0	0	0
Garlic.....	bunch	0	0	0	Scorzonera.....	bunch	1	0	0
Herbs.....	bunch	0	0	0	Seakale.....	basket	1	0	0
Horseradish.....	bunch	0	0	0	Shallots.....	lb.	0	0	0
Lettuce.....	dozen	0	0	0	Spinach.....	bushel	4	0	0
French Cabbage.....	dozen	1	0	0	Tomatoes.....	dozen	0	0	0
					Turnips.....	bunch	0	0	0
					Vegetable Marrows.....	dozen	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	APRIL, 6-12, 1876.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.	
6	Tu	Linnean Society at 8 P.M. Royal Society at 8.30 P.M.	59.1	54.7	56.9	5 25	6 40	4 9	4 41	12	2 19	97
7	F	Royal Institution at 8 P.M.	59.4	56.9	58.1	5 26	6 41	5 26	4 53	13	2 2	98
8	S	Royal Botanic Society at 5.45.	55.7	56.8	56.8	5 20	6 43	6 46	5 8	14	1 45	99
9	Su	PALM SUNDAY.	54.5	55.5	55.0	5 18	6 45	8 4	5 18	15	1 28	100
10	M	Royal Geographical Society at 8.30 P.M.	55.4	56.6	56.0	5 16	6 46	9 22	5 27	16	1 11	101
11	Tu	Royal Medical and Chirurgical Society at 8.30 P.M.	55.8	56.6	56.2	5 14	6 48	10 39	5 48	17	0 55	102
12	W	Royal Aquarium Show, Westminster, opens.	55.6	56.6	56.1	5 12	6 50	11 52	6 5	18	0 39	103

From observations taken near London during forty-three years, the average day temperature of the week is 55.4°; and the night temperature 55.9°.

ROSE PRUNING.

[We sent a correspondent's letter of inquiries to Mr. Camm. The following is his reply.]



NOTHING more concise or cool than the queries asked by "F. F., Bridgnorth," it has not been my previous fortune to meet with. They remind me forcibly of those terrible papers set one in the Divinity School at Oxford, but fortunately they are very much easier to answer; but even if more difficult the Journal would be ready to give an opinion without grudging, without fear, and without favour. Ask, and if not satisfied ask again; the more questions the merrier, the greater the delight that rosarians will feel. For this is one of the most forcible of all proofs how popular is the Rose—the *empress* I suppose we must say now of flowers. *Rosa regina et imperatrix florum.*

(1). "When is the proper time for pruning Hybrid Perpetual *stds.*?" By the way, with regard to this abbreviation for standards, a man to whom I wrote asking, "Do you want any *stds.*?" wrote back, enclosing that portion of my letter, asking, "What sort of garden produce is this *std.*?" I suppose some kind of seeds, but we have looked all through several lists of seeds, but all in vain." If "F. F." has not yet pruned his standard Roses I should advise him to begin at once. All Hybrid Perpetuals ought to have been pruned by this time if the trees were planted last autumn or are old trees. If they were purchased late this spring he may defer the pruning a short time, but not for long. The first or second week in March is about the best time for pruning in general cases; and as "F. F." is so very concise in his questions that I cannot tell whether his rosery is in an exposed position, on the top of a hill, or close to a stream, in front of a kitchen-garden wall, or behind his house with a delightful north aspect, I can only speak generally. But in any case his Roses (all but Teas and Noisettes) ought to be pruned before All Fools' Day.

(2). "How many eyes should be left?" "Do you, sir," asked a riding-master once to me, "do you want a military or a 'unting' seat?" If a military, let your stirrups down; if a 'unting,' shorten-up close." Do you, "F. F.," want to exhibit your blooms, or do you merely want them to adorn your garden? Do you want to come and take the shine out of Mr. Baker and Mr. Jowett at the Hereford Show, or do you merely want to have a lot of blooms for madame to pick at her will? If to exhibit your blooms, then the "unting seat" is what you want, and you must cut your Roses hard—shorten your stirrups. As to the number of eyes I do not think you can do better or fairer than leave them the same number you yourself possess—if you have two. If you merely want to grow garden Roses, quantity rather than quality—if you, like my critic Mr. Taylor, wish to have hundreds of blooms outside and inside your house, then spare the Rose, leave as many eyes on your shoots as there may be in your combined family and household.

No. 784.—VOL. XXX., NEW SERIES.

With regard to Mr. Taylor's remark about being expected to furnish such a quantity for the house, I remember one day at the Botanic Rose Show meeting a first-class gardener who was exhibiting in that absurd class, "A Collection of Red and Pink Roses in Baskets not more than 3 feet in diameter." He had brought up literally thousands of blooms that day. On my expressing astonishment at the number he said, "Oh! sir, this is nothing. I send such a basket as this thrice a-week to our people in London." "Whatever do they do with them?" I asked. "I believe," said a bystander, "I believe that they eat them."

(3). "Whether the new shoots or old should be pruned?" No difficulty here. Both should be operated upon, and the weak wood, by which I fancy "F. F." means by the new shoots, should be entirely removed—cut away; let in the daylight, give old Sol a chance, and as you cut look out for a good sound eye which faces his majesty, not one that is scowling at the "shades of darkness," to which the interior of a massive old standard's head may be likened. Try to make the heads a little symmetrical; do not have the outside shoots above the centre ones.

(4). "Should a *Maréchal Niel* in hothouse be pruned, and how much?" Very little, if any, pruning is required for the glorious *Maréchal*; any dead wood must be removed and unripened shoots must be cut away, and that is about all.

(5). "Also climbers out of doors, such as *Gloire de Dijon*?" Well, it depends a good deal on the sorts; the old *Gloire*, as a rule, will stand a little pruning; he generally has a lot of shoots which require shortening, but even this should be done with care. Teas of any kind require very little pruning. If "F. F." has a *Cloth of Gold* growing against his house or a *Bankaia* let me implore him not to touch it.

(6 and last). "Last year my *Maréchal Niel* dropped all the buds. What caused this?" Ah, there's a puzzler! I might reply in one word—Neglect, but I won't, though it would be pretty safe to answer so; and as I never saw the plant in question, know nothing of what soil it is grown in or of its aspect, it would be the safest answer. Perhaps, too, I shall expose myself to the scorn of "F. F." if I hint that although the wind blows very cold in March, yet the sun is pretty high in the heavens, and beats with a good deal of force upon the unscreened glass of the greenhouse. Perhaps, also, the gardener who has to see after the greenhouse may be sent off to bring in the vegetables for the early dinner just as he ought to be pulling down the blinds, or may be, when he should be watering the dear *Niel*. In the early morning he is attending to his fires, and is really that driven that he cannot attend as he should to the climbers. Or it may happen that now and then he leaves the firing-up to a subordinate, who heaps on the fuel at a tremendous rate in the daytime and forgets to see to the fires at night. Any of these possibilities may have caused the buds to have dropped off, and you might as well expect me to say which of them did the mischief as to say whether "F. F."

No. 1495.—VOL. LV., OLD SERIES.

is a man or a woman. Nothing requires greater care or more patient love than the *Maréchal Niel* indoors. An even temperature, regular watering—not an occasional deluge followed by the drought of Egypt. Fumigate regularly to destroy the aphides. If you are forcing your Roses you will find the fly more troublesome than if your Rose tree is merely protected by the glass. Always shade when the sun is hot, and keep the syringe going when the sun is off. These are my rules, and as soon as this sees the light you will have hundreds of others given you by more correspondents of the Journal, and you will be able then to try them all one after another, and then write and tell the Editors of the result.—JOHN B. M. CAMM.

A FEW NOTABLE HARDY ROCK PLANTS.

ARTIFICIAL rockwork is never much cared for till it is partly concealed by the growth of such plants as find a suitable home among its crevices. Preference is usually given to alpine succulents of lowly growth and exquisite form, but so minute withal that a considerable space of time must elapse before they can become really effective; hence it is desirable to blend with them other plants of more rapid growth and bolder appearance, so disposed as to afford a partial clothing of greenery to the larger masses of rock as quickly as possible, and yet leaving ample space for the pretty little alpine gems, which are certainly most worthy of all due prominence. Among several plants which I have tried for this purpose a few have answered the desired end so admirably as to be worthy of especial notice. One of the best of these is

Pyrethrum Tchitchewi.—This plant has been brought somewhat prominently into notice as a substitute for lawn turf, which it decidedly is not. For spreading over the surface of rocks it is almost unrivalled; the dense, compact, moss-like growth, decumbent spreading habit, and the lively colour of its evergreen foliage, combining to render it an attractive object at all seasons of the year, but more especially during winter, when the perennial greening of its mossy branchlets spread cushion-like upon the face of the hard bare rock stand out in pleasing contrast to the bare death-like aspect of deciduous plants.

Silene maritima is also a perennial altogether of a bolder type than the *Pyrethrum*. Its well-shaped leaves are set thickly upon the long, flexible, spreading growth. Planted upon the edge of a rock it will spread over a space of nearly a yard in diameter in one season, forming charming pendant masses of bright green, which in early summer are enlivened with numerous white flowers. No especial care is required to obtain a stock of plants, every branch rooting freely wherever it touches the soil.

Linaria cymbalaria.—This is the common Ivy-leaved *Linaria* so frequently to be seen trailing over old ruins and walls. It spreads with surprising rapidity, and will cover many square feet of rock surface in a few months. The slender growth bears elegant foliage and pretty simple little pink flowers, hanging its wild festoons over the rocks in such graceful garlands of greenery that one wonders why it is not more frequently found in gardens. Surely it ought no more to be excluded because it grows wild than *Silene maritima*, which is also a British plant.

Lithospermum prostratum.—An invaluable plant for the rockery as well as for many other purposes. It has a low dense habit of growth, the spreading branches having a thick perennial clothing of dark green foliage. The pretty deep blue flowers open abundantly in May and June, continuing a long while in full beauty. Early summer may therefore be named as the season of its fullest beauty, but in sheltered nooks it is never without a few flowers at all seasons of the year, even in the depth of winter. Cuttings of the young growth root freely in a cold frame. Planted in rich loam it forms tufts of 1 to 2 feet in diameter in a single season.

Antennaria candida.—This plant was sent to me with a strong recommendation, as being greatly superior to *A. tomentosa*. It has not disappointed me, making such excellent dwarf edgings of soft grey, and so quickly, as to induce me to put a few plants of it among the rocks, where it forms pretty grey cushions of about a foot in diameter, offering a pleasing contrast to the red sandstone as well as to the green-leaved plants.

The five plants which I have thus described are suitable for rockeries large and small, being easily kept within bounds. To them I will add the small-leaved kinds of *Helianthemum* or *Rock Cistus*, a charming family of dwarf, recumbent, shrub-

like perennial plants, yielding a profusion of blossom in early summer. Nothing can be more charming than the effect of the bright masses of their flowers, ranging through various shades of white, pink, yellow, and violet. All the kinds that I have grown are readily increased by seed or cuttings.—EDWARD LUCKHURST.

THE HAWTHORNDEN APPLE.

I THINK that this Apple has scarcely had justice done it, or at least that it has only had that kind of justice called "scant justice." It is a very popular Apple, and has been so for many years. Now, no Apple is lastingly popular unless it is useful and beautiful, or if not beautiful it must be excessively useful. As to the beauty of the Hawthornden I own I seldom see it on the tree or gather it without being forced to admire it. Its full form, its delicate silver-like skin and refined bloom, then its bright blush on the sunny side—all these make together a truly beautiful Apple. Its cooking qualities while in season are great, particularly when roasted, when its white creamy flesh breaks through the embrowned skin; while its flavour, however cooked—baked, roasted, or boiled—is excellent. The New Hawthornden will hardly take its place, as it comes in later; indeed, I do not know any Apple which does or will, though I write under correction in this. As to the time in which it is in season doctors differ. The "Fruit Manual" says, "from October to December;" Mr. Richard Smith says, "September to December," while here in this south-west of England I have found it good only, or chiefly, in September and October.

While all would readily own the beauty of the Hawthornden and its good flavour, there remains the point of the tree's unhealthiness. In the fens of England, where the subsoil is in fenny parts blue clay; in the islands on which (for originally they were islands) most of the fen towns stand, the subsoil is gravel. In these parts I have always found that the Hawthornden did not prosper, but became hopelessly cankered and a disagreeable object after a few years, but at the same time bearing well until wholly overcome by canker. Now in this part of England, North Wilts, with a good loam and a sandy clay for subsoil, and a mild air, this variety of Apple does well. I have a tree forty years old scarcely at all cankered—not indeed noticeable by the presence of disease, and another twenty years old which is as smooth in skin as can be desired. Both trees bear heavily every year, and the fruit is as healthy as can be wished. I think most of the writers who have spoken of the Hawthornden as doing badly reside either in the north or east of England. I find, however, that in all cases, in spite of soft air and good soil, the Ribston Pippin becomes here terribly diseased; more's the pity, for I know no proper substitute, but not so diseased is the Hawthornden. I incline to think that with depth of soil and rather heaviness of soil, with a subsoil of clayey sand, and particularly in the west or south of England, the Hawthornden, in spite of its northern origin, does well. Hence I agree with the remark of "AN OLD GARDENER," that "in a generous and well-drained soil this Apple will do well. Further, I think it is too valuable an Apple to be 'written down,' and that the favourable account given of it in the 'Fruit Manual' is correct where the soil, &c., is suitable. May I suggest that cultivators of Apples and those interested in them would supply lists—they need not be numerous—of those Apples combining beauty and usefulness which thrive best in their districts, particularly as guides to amateurs? I see Mr. Robson states 'there are plenty of Apple trees now with all the qualities of the Hawthornden, and much better constitution.' He might kindly tell us these. I think it would be a good thing to know for certain what Apples, cooking and dessert, did best. Good cooking Apples are, of course, most valuable late in the season; but in September, if not earlier, Apples are welcomed on many tables in tarts and puddings, while as to dessert Apples they are wanted as early as possible, and till Apples come again. The last word that has been spoken in favour of my old friend the Hawthornden is, I see, in the number of March 9th by "M. H., Camphill, Bedale, Yorkshire;" and, his or her—for M stands for Mary as well as for Matthew—account is important, as stating that, given a good and suitable soil, this Apple does well in the north of England, even in the northern part of Yorkshire.

In conclusion I must remark how glad I am that much attention and much information are being given concerning hardy fruits, and particularly to that most useful of hardy

fruit the Apple. Dr. Hogg's classification will help forward the right understanding of Apples, for once let information be arranged and tabulated on any given subject, that subject will be easily understood.—WILTSHIRE RECTOR.

THE ARRANGEMENTS OF COLOURS

IN THE BEDS OF THE LONDON PARKS AND GARDENS.—No. 11.

THE accompanying designs are suitable for ornamental borders at the foot of a wall. The wall we must suppose is

are cleared in the autumn they must be taken up carefully and planted again firmly by treading the ground around them. It is quite hardy.

4. *Ageratum Imperial Dwarf*.—A valuable acquisition to bedding plants. Cuttings struck in April will make good plants to turn out by the end of May.

5. *Coleus Verschaffeltii splendens*.

6. *Pachyphytum bracteosum*.—Its large succulent leaves closely borne on the stems are covered with a glaucous bloom or silvery white powder—a desirable acquisition to that class

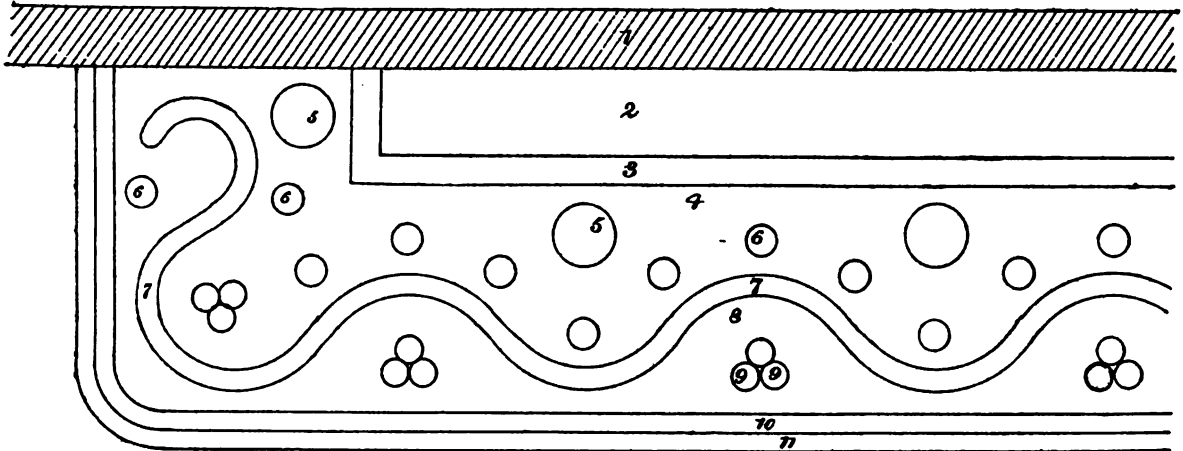


Fig. 77.—Bed S.

covered with creepers, which will form a good background for bright colours.

BED S.

1. The wall.
2. Scarlet Geranium—any tall-growing kind.
3. *Centaurea gymnocarpa*.
4. Purple King Verbena.
5. Yellow Calceolaria.
6. Geranium, silver-edged variety.—There is one called

of plants. It is very valuable for edgings or for lines in ornamental designs. It endures well through the winter in an ordinary greenhouse. It is increased by laying the little leaves on a pan or pot of white sand; they need not be inserted, but merely laid upon the sand; the roots will soon appear and find the sand.

7. Golden Pyrethrum.

8. *Alternanthera magnifica*.

9. *Kleinia repens*.—A neat-growing, distinct, and effective

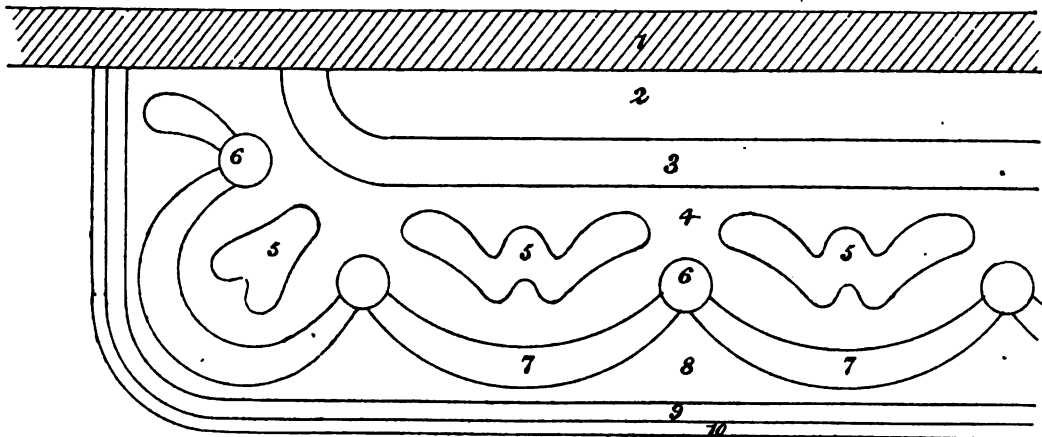


Fig. 78.—Bed T.

Elegantissima, a charming little plant of compact habit, specially adapted for small groups in fancy parterres in scroll work, or in any lady's flower-garden design. Let the flowers remain on, for they will add to the beauty of the whole.

7. Golden Pyrethrum.
8. *Alternanthera amena*.
9. *Cerastium tomentosum*.
10. *Lobelia pumila grandiflora*.
11. *Stellaria graminea aurea*.

BED T.

1. The wall. 2. Crimson Geranium. 3. *Dactylis glomerata elegantissima*.—The best way to increase this plant is to divide it into small pieces in the spring and not in the autumn; and if it is disturbed when the beds

little plant. The leaves and stems are covered with a glaucous bloom of a bluish grey. It is a succulent plant, and one of the most useful for bedding purposes. It is increased by cuttings or by pulling off the leaves from the stem and treating them the same as the *Pachyphytum*.

10. *Stellaria graminea aurea*.—N. COLE, Kensington.

CINERARIAS.

I HAVE sent you a spray of each of my Cinerarias for inspection. The plants themselves (about eighty) are a sight worth seeing. They are rather self-coloured, but I have not seen any such large-flowering Cinerarias about here, and there are some good growers—my neighbours. The plants are about

18 inches through, some over 2 feet, and some of them have four hundred flowers on them, besides what are out for indoors. The leaves are like Rhubarb.

At first I saved seed from one of Veitch's, a large deep blue; that was four years ago, and I have since saved seed from my own plants, and this year the flowers are the best I have had. Do you think some of the best are worth saving seed from this year, and would be worth putting in the hands of one of our seedsmen for distribution? I have one plant (which is in the house) with flowers $2\frac{1}{2}$ inches across—a deep blue beauty.—W. WELLS, *Turner's Hill, Crawley, Sussex.*

[The flowers are some of the finest we have seen. We think them quite worthy of being saved and sold.—EDS.]

TRANSACTIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY FOR THE YEAR 1875.

PART 2.

THROUGH the kindness of Mr. Buswell, the Librarian of this old and flourishing Society, I have received the report of its Transactions, and a perusal of it suggests one or two thoughts bearing upon the state of horticultural societies both there and amongst ourselves.

I notice that the same chequered state of existence befalls horticultural societies in America as well as amongst ourselves; for while this Society seems to be in a most flourishing condition, has upwards of a thousand members, is gradually gathering together an excellent library, allocates six to eight hundred dollars for prizes during the present year, publishes two very respectable pamphlets in the year, awarding a thousand dollars to their editor and spending 1700 dollars on printing, and has an available balance of assets over liabilities of 200,000 dollars, its sister Society of Cambridge has come to grief and has handed its library over to it. Now it is not too much to say that we have no society in England that does this. We all, alas! know what the Royal Horticultural Society has done in times past; how its Transactions came out by fits and starts, like a sort of epileptic seizure, which seemed to mark activity but soon subsided and left the patient only the more exhausted. The Lindley Library remains *in statu quo*, few of the Fellows seem to know its rules and there are no means of adding to it, while the assets of the Society are all on the wrong side of the ledger. The only very flourishing Horticultural Society that I know of is, strange to say, the Royal Horticultural Society of Ireland: it has a large balance in the bank, but then it does nothing more than hold exhibitions and award prizes.

I notice that the Society offers prizes for essays on certain subjects, and that the successful ones are read at their meetings, and that then discussions take place on them. Now, as the Royal Horticultural Society has—(amongst its plans for reviving its drooping fortunes, and in order to show that it is really desirous of being what it ought to be, the leader in every practical effort to advance the science)—announced the intention of lectures to be given at South Kensington and Chiswick, would not this plan be advisable?—Let subjects of a popular character be chosen (for scientific ones may be left to the Committee of that ilk), let a competent sub-committee of these read over any that may be sent in, and let the successful one be chosen for the meeting and be read by somebody who knows how to read. By this means we should not have either musty dry-as-dust or semi-philosophical diatribes inflicted on the audience. Nor would it be necessary to carry ear-trumpets to catch the mumblings of some clever writer; for let it be borne in mind that it is not every clever man who can write a popular essay, or who can read it so that it can be heard when it is written.

The Society adopts the plan which the present Council of the Royal Horticultural Society have through want of funds been obliged to abandon, but which is, I am sure, calculated to advance horticulture—that of offering prizes at their various meetings. For what is the result now?—there are no prizes offered from March until June, or from July to November. The growers of florists' flowers are thus shut out, and many plants which might make an effective display are held back; for, after all, people will consider whether they are to get anything for their trouble. The mistake that was made was in calling those minor exhibitions shows and charging absurd prices for admission. People naturally said, "Do you call this a show?" and then declared it to be all humbug; whereas if they had been merely regarded as an adjunct of the Com-

mittees and for the benefit of the Fellows and their friends they would have been appreciated, and the few shillings that were taken were a poor compensation for the growls of disappointment heard on every side.

Another noticeable feature is the kindly and social feeling which seems to be encouraged amongst its members. The deaths of its more prominent members are noticed with well-chosen words of regret, and the opportunities of friendly intercourse seem to be readily made use of. It may be that our stiff and cold insular manners are against this feature, but I feel persuaded it goes a long way in the furtherance of the Society's objects. The Royal Horticultural Society has now in its officers those who wish well to horticulture, and who would, I am sure, be glad to see the old stand-offishness done away with, and let us hope that their efforts may be crowned with success.

I gather from the report that there are many varieties of fruits of which we see or know nothing on this side of the water; and the wonder is that some of our enterprising caterers, who have inundated us with a lot of worthless rubbish in the way of Potatoes, do not introduce some of them for trial. Thus, amongst Strawberries I notice President Wilder, Jenny Lind, Grace, Col. Cherry, and Hovey's Seedling. Belle and General Sherman as new varieties are highly spoken of amongst Raspberries, Hornet and Heratine, Clarke & Saunders; while amongst Grapes there seems to be as great a contest to get new varieties as amongst us, and several are highly spoken of. Let us hope that the Centennial Exhibition may draw together horticulturists of both countries, and tend to foster kindly and brotherly feelings in a pursuit which of all others ought to encourage such.—D., *Deal.*

RESTING AND GROWING PLANTS IN WINTER.

I AGREE with Mr. Peach in most of what he has said on pages 171 and 172, but I differ a little in some points.

In resting stove plants I move them into as low a temperature as they can bear, keeping them moist, and when the resting season is over I find the plants so treated grow much stronger than when kept in a high temperature and permitted to become dry at the roots.

I think it bad treatment to force artificial rest by withholding water and keeping the plants in a high temperature until the life is almost dried out of them. When those dried plants are again watered, instead of growing healthy the foliage turns yellow, the plants make but little growth, and they must be plunged in a strong bottom heat to force new life into them, and the season is gone before the plants recover their health again. I know there are some stove plants that cannot bear a low temperature, but many can when at rest.

I think all pot plants require a rest. By keeping them always growing the foliage is thin and weakly, and the flowers poor. The plants that are rested in a low temperature and have moisture enough to keep them fresh will when brought into stove temperature produce foliage thick, strong, and healthy, with flowers good and plenty of them.

I think vineries might be made more use of than they are for growing bedding plants in winter. If a vinery is started in November or December at 45°, that is a proper temperature for most of our bedding plants; but the plants should be removed before the Vines begin to flower, for it is very inconvenient to thin the Grapes and stop the laterals with the vinery full of plants; and when good fruit is required for table and plenty of it, it is difficult to give the Vines proper treatment to produce good fruit without removing the plants from the houses, but a few plants will not do harm if the ventilators are open early in the morning, and if the Vines do not shade the plants too much.

I like to keep bedding plants growing, and the sooner they flower the better, for where cut flowers are in demand I find our bedding Geraniums very useful. I have some Verbenas which were struck early in autumn and potted into 48-pots, which have done duty on the dining table; these will now be cut down, and will make bushy plants for bedding-out in May.—G. S., *Gardener, Faulkners House.*

SELECT DAHLIAS.

THE following names are selected as being amongst the best in my collection, which comprises upwards of 150 varieties:—*Twenty-four Show Varieties.*—Alexander Cramond, maroon shaded with crimson; Acme of Perfection, primrose; Amy

Creed, salmon; Baron Taunton, lilac; Criterion, rosy lilac; Flag of Truce, white, flaked with lilac; Flora Whyatt, orange; James Cooker, purple; Hebe, light, edged with rosy lilac; James Service, crimson purple; John Neville Keynes, yellow; John Standish, bright red; Lady Gladys Herbert, light orange, deeply edged with crimson; Leah, bright orange; Lady Derby, white, tipped with deep purple; Miss Henshaw, white; Mr. Seaman, buff, tipped with bright purple; Monarch, the darkest Dahlia out; Queen of York, light bluish; Vice-President, orange; Ovid, bright crimson purple; Princess of Wales, bluish, slightly edged with lilac; Mrs. Harris, white, edged with pale lilac; Royal Queen, white ground, deeply edged with purplish crimson.

Eighteen Fancy Varieties.—Carnation, Dolly Varden, Ebor, Egyptian Prince, Fanny Sturt, Grand Duchess, Hero of York, Harlequin, John Sealy, Miss Saunders, Prospero, Rev. J. B. M. Camm, Rose Flake, Flora Whyatt, Viceroy, Herbert Purchase, Lady Spokes, Madame Sherrington.—J. T. C.

ROYAL HORTICULTURAL SOCIETY.

APRIL 5TH.

FRUIT COMMITTEE.—Henry Webb, Esq., in the chair. The Hon. and Rev. J. T. Boscawen sent a brace of Cucumbers produced from a plant which was raised from a cutting. It is a seedling raised by Mr. Boscawen thirteen years ago, but being a bad seed-bearer it has ever since been propagated by cuttings. It is a white-spined variety of the old-fashioned type. A letter of thanks was awarded. Mr. Parsons, The Gardens, Danesbury, sent a dish of the Magnum Bonum Onion, which is a finely selected stock of Globe. It is a remarkably handsome bulb, and maintains the high reputation the Committee had previously expressed. Mr. Bate of Bellbroughton, near Stourbridge, sent a dish of Bellbroughton Pippin Apple, which was considered very similar to Lincoln Codlin.

Messrs. Rivers & Son of Sawbridgeworth sent a collection of Apples and Pears. Louise Bonne de Printemps was thought richly flavoured with a fine rose-water aroma. Fortunée was rather coarse in flesh, but with a fine aroma. There were also fine specimens of Herefordshire Pearmain, Sturmer Pippin, Primrose, Roxbury Russet, Golden Harvey, Api, and Mala Carlo Apples. A vote of thanks was unanimously awarded for the collection.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. There was a good attendance in the Council room on this occasion, and the contributions of plants and cut flowers rendered the meeting both interesting and attractive.

The plant which absorbed the lion's share of attention was *Odontoglossum cirrhosum*, imported by Mr. Bull from Ecuador, and exhibited by Mr. Henley, gardener to Spencer Brunton, Esq., Beckenham. This is a distinct and valuable addition to this useful genus of free-growing and free-flowering Orchids. *O. cirrhosum* is a plant that will be coveted by all growers of Orchids. The plant is evidently of easy growth and is a profuse bloomer. As exhibited it had three spikes, one of which was about 2 feet in height, gracefully arched, and supporting twelve handsome flowers. The sepals and petals are long, slender, and waved, terminating in sharp points; the flowers are white with a bluish tinge, heavily spotted with maroon; the labellum being orange, with a fringed crest and brown-striped lobes. The plant is after the character of *O. nevium*, but is distinct from and superior to that species.

Messrs. Veitch & Sons staged a small group of plants. Of these *Dendrobium Wardianum* had five spikes, one of which contained twenty grand flowers. This firm also exhibited *Rhododendron Princess of Wales*, a cross between *R. Princess Royal* and *R. Loblii*. The truss contained twelve blooms of a warm rose colour with lighter centre. This is a greenhouse variety of great merit and undoubted value. It received a first-class certificate. A similar award was made to *Adiantum digitatum*, which is one of the most elegant of Ferns, and is thoroughly distinct from all others of the type. *Cattleya Veitchii* was exhibited with six flowers of great beauty; for this plant a vote of thanks was awarded. **Messrs. Veitch** also exhibited *Odontoglossum mullus* and *gloriosum*, which are similar in their flowers but different in foliage and form of spike.

Mr. B. S. Williams exhibited an ornamental group of fine-foliated and flowering plants. Amongst the former were Palms, Cycads, *Pandanus Veitchii*, Ferns, *Dracaenas*, and *Bertolonias* Van Houttei and *superbissima*; the flowering plants comprising Orchids in variety, *Sarracenia flava*, *Lasiandra macrantha* vera, the flower being 4 inches in diameter and exceedingly rich; *Toxicophaea spectabilis*, and *Tillandsia Lindenii*. **Mr. Williams** also staged a collection of brilliant *Amaryllids*. Votes of thanks were awarded for both these collections.

Messrs. Paul & Sons, Cheshunt, exhibited a very singular plant, *Heterothropa asaroides*, having foliage similar to *Cycla-*

men persicum, and flowers not unlike those of a *Stapelia*. A vote of thanks was awarded for this plant.

Messrs. Paul also staged some admirable boxes of out Roses, all of which were good, but *Maréchal Niel* was grand and received a cultural certificate. They also exhibited Roses in pots; small plants with robust foliage and fine blooms of *Jean Ducher*, a Tea Rose of great promise; *Hippolyte Jamain*, *Emily Laxton*, and *Comte de Serenyi*. A vote of thanks was awarded. **Mr. Bennett, Manor Farm Nursery, Stapleford**, exhibited a box of out Roses, including some seedlings of a promising character.

Messrs. Fisher Holmes & Co., Handsworth Nursery, Sheffield, exhibited *Rhododendron Fisher Holmes*, a sweet-scented white variety of superior quality, which was highly commended. **G. F. Wilson, Esq., F.L.S.**, exhibited a basket of *Primulas*. *P. purpurea*, of the *P. denticulata* type, was very attractive; and *P. ciliata* (*Alpine Auricula*) was distinct by its purple-maroon flowers. **Mr. Wilson** also exhibited a *Primula* having flowers 1½ inch in diameter. A new *Primula* from Japan was exhibited by **Messrs. F. Saunders & Co., seed-growers, St. Albans**, having flowers not unlike *P. amona*, but with foliage perfectly distinct. **Mr. Harrison Weir, Weirleigh**, exhibited a plant of *Myosotis Weirleigh Surprise*, every petal of which is clearly banded with white, not unlike the old *Verbena Imperatrice Elizabeth*. It is a charming and distinct variety, and some surprise was expressed that this and the preceding plant was passed by the Committee.

Mr. Ollerhead, gardener to Sir H. Peck, Wimbledon House, exhibited five baskets of *Laobanalias*. These were very novel. The bulbs had been closely planted in the baskets, and when the plants flowered the baskets were reversed, showing the hundreds of flowers from beneath. **Mr. Ollerhead** also exhibited *Dendrobium litaiflorum* densely bloomed, *Phalaenopsis Schilleriana* with grand flowers, *Dendrobium glumaceum*, and *Odontoglossum Alexandr.* A vote of thanks was awarded for the collection. **Mr. R. T. Clarke** exhibited a double *Primula* distinct by flowering in umbels, also a fine primrose-coloured *Polyanthus*. A vote of thanks was awarded. **Mr. Noble, Bagshot**, exhibited *Clematis The President*, a purplish blue variety having a very large flower, the colour also being very rich. A first-class certificate was awarded. **Messrs. Barr & Sugden** received a vote of thanks for a collection of *Narcissuses* in great variety; they were very bright and attractive.

Messrs. Paul submitted to the Scientific Committee a plant of the Purple Birch, *Betula purpurea*, from which the upper buds had been removed to increase the stock. From the space beneath the bark removed other buds formed and produced green foliage, a lower bud from the bark producing purple leaves, thus suggesting very clearly, if not deciding, that the purple colour is in the bark alone and transmitted to the foliage.]

DOUBLE NASTURTIUMS.

It is quite cheering to see that some of our old favourite plants are again putting in an appearance. I was much pleased to see an account in "our Journal" of that fine old winter-blooming plant *Eranthemum pulchellum*, known to us in our youthful days as *Justicia cœrulea*; but we must have changes so with names. Other plants used to be seen much more frequently than at the present that did us good service in the winter and spring—namely, *Tropæolum majus flore-plena* and *T. minus flore-plena*.

It is a good time now to propagate these charming coloured flowers if we intend to have them in good condition for next winter's decoration, and they are useful where out flowers are in demand. Cuttings root readily in moist sandy soil in gentle bottom heat. When rooted they may be potted singly into 3-inch pots in rich light sandy soil, and kept in gentle heat until established; they may then be hardened to a cool temperature, stopped and grown-on as may be desired. They should have thorough drainage and be kept free from damp, but should not suffer for want of water.

If they prosper till the autumn they must be taken into a warm greenhouse, and with care will help to make a grand display and yield a good supply of flowers for all purposes that flowers are required for.

These flowers are said to have been seen by a daughter of the celebrated Linnaeus emit spontaneously in the evening at certain intervals electric sparks, but I have never been able to detect them. If this is a fact information would be appreciated by a lover of—INDIAN GRESS.

PRIMULA ALTAICA.—A correspondent writes that this *Primula* is invaluable as a bedding plant for spring gardens. Some beds edged with the common *Primrose*, and others with the white *Arabis*, are now, and have been for some time, in great

beauty, the lilac-blue of *P. altaica* contrasting admirably with the white and primrose-coloured margins. *P. altaica* is represented to be a free-growing and profuse-flowering species, and is alike hardy and effective. The plants alluded to have had no protection afforded them, and although they have been exposed to sharp frosts and heavy rains they have braved the storm without receiving injury.

NOTES AND GLEANINGS.

"G. D." writes that a very pleasing ORNAMENT FOR THE DINING TABLE may be made by anyone having a few pots of *Panicum variegatum*. By gathering up the ends of the longest sprays and tying them to a stick fixed in the centre the framework of a small pyramid is formed. Pinching occasionally is all that is afterwards required to make most attractive objects. Those who have to supply plants daily for the table will find these pyramids useful, as they afford variety and are sure to give satisfaction.

THE Lords of the Committee of Council on Education have given directions for a COURSE OF INSTRUCTION IN BOTANY to be delivered at South Kensington, commencing about the middle of June 1876. This course will be given by Professor Threlson Dyer, M.A., B.Sc., &c. It will be a daily lecture, with practical instruction in the Laboratory, and will extend over about eight weeks. A limited number of Science Teachers, or of persons intending to become Science Teachers, will be admitted to the course free of expense. They will also receive their travelling expenses to and from London, together with a maintenance allowance of 30s. per week while attending the course. The hours of attendance will be from 10 A.M. to 4 or 5 P.M.

AT the Linnean Society on the 23rd ult. the adjourned debate on the observations made by Professor De Bary on the fungus producing the POTATO DISEASE was opened by Mr. Carruthers, who explained the reasons which had led the eminent professor of Strasbourg to doubt the correctness of Mr. W. G. Smith's observations on the resting-spores. Among the principal objections raised by De Bary are the different diameters of the spawn-threads or mycelium, bearing the antheridium (male) and the oospore (female) respectively. He further questions the connection between the spawn-threads and the resting-spores figured by Mr. Smith; and from these and other points, such as the septate threads of Mr. Smith's fungus, he considers that Mr. Smith is dealing with two distinct fungi, and that probably the resting-spores found by Mr. Smith are those of a *Pythium*, and not of a *Peronospora*. Mr. Berkeley considered that some of the points raised by De Bary in his comments on Mr. Smith's researches were "hypercritical." He pointed out that Mr. Smith's figures showed the actual process of impregnation taking place between the antheridium on the smaller spawn-threads and the oogonium on the larger spawn-threads, and he concluded by expressing his own opinion that Mr. Smith was right in the main, and that the bodies figured by Mr. Smith are the "true resting-spores of the Potato fungus."

WE have received a copy of the BALANCE SHEET OF THE UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY, and are well pleased to see that it is prosperous. Its members meet monthly, and yet the management expenses last year were only £8 5s. 9d. The Secretary is Mr. J. F. McKilroy, The Gardens, Moray Lodge, Campden Hill, Kensington.

MR. HENRY OMSON, Stanley Bridge, King's Road, Chelsea, has been instructed to erect, from his own designs, an extensive range of iron and glass structures for the Royal Botanic Garden and Polytechnic Institution, Lisbon.

WE have never seen the great decorative value of SINGLE WALLFLOWERS so fully demonstrated as in the gardens of the Hon. A. Leslie Melville at Branston. In the greenhouse there—a small span-roofed structure—the display of flowers is sumptuous, and amongst them the Wallflowers are both charming by their perfume and effective by their rich spikes of flowers. These plants have been raised from seed which was sown early in the spring. The plants are dwarf, and have produced from fifteen to thirty-five spikes of flowers each, and have for some time past won the admiration of many visitors. For forcing in pots the single are much preferable to the double varieties, and in order to have the flowers early and the plants fine, seed should be sown at the present time.

WE recommend to those who wish to acquire a knowledge of our native entomology "SKETCHES OF BRITISH INSECTS, a Handbook for Beginners in the Study of Entomology." The author is the Rev. W. Houghton. It is illustrated with coloured plates and wood engravings, and is both instructive and amusing.

AT the monthly meeting of the BATH AND WEST OF ENGLAND held on the 28th of March, Mr. Gray, as Chairman of the deputation appointed to visit Bath with reference to the centenary meeting in 1877, reported in favour of Mr. Butler's farm, near the Bear Inn, Holloway, as the site for the Society's Show Yard, but left the selection of fields for the trial of implements an open question; and the report having been accepted and approved by the Council, the Field Stewards undertook by the next meeting (April 25th), to furnish a supplemental report on several matters of detail. The arrangement for the Society's visit to Bath may therefore be taken as finally settled, Holloway Farm being the site for the Show Yard.

ONIONS AND THEIR CULTURE.

ONIONS, it is recorded, have been cultivated by the Egyptians for upwards of three thousand years, and that they are still highly esteemed by the inhabitants of that "ancient nation." It is uncertain at what period the Onion was introduced into Britain, for it is generally admitted that it is not indigenous to our island, but found its way to our shores at some remote period from central Europe. The Strasburgh is probably the oldest variety of Onion as it is, perhaps, the hardest, and in other good qualities it has still few superiors. Thus, although the Onion has for ages been cultivated over a vast extent of the earth's surface, and has constituted a staple article of food of nations ancient and modern, barbarous and civilised, yet no striking advance has been made in the character of the bulb, and "Onions is Onions" has become a proverb.

That being so it might seem a matter of surprise that any perplexity might be experienced either in the selection of sorts or on points of culture, yet such perplexities exist, and many a young gardener and amateur cultivator scans with anxiety long lists of names which are presented to him, and compares as well as he can the various testimonials of merit which are generally included in the list and are attached to the greater number of the names, hoping that he may arrive at a correct conclusion and produce something superior to what has been produced before. He glances at "Deftford," and "Spanish," and "Strasburgh," and "Banbury," and "Globe," but these are old names and sorts, and he is looking for improvements, and "Trebons" and "Roccos," and other fine titles have a better sound. But let him be careful, or he may find that Onions are not Onions in the sense that he has anticipated, and may produce a harvest of thick-necked specimens that refuse to lie dormant after Christmas, and that his stock is so "advanced" as to have run away, leaving him no sound bulbs for the kitchen.

Let it be recorded by one who has been bitten by the novelties in spite of the excellent teaching that he had received, that there is danger in ignoring the old kinds. It is from them that the grower must still choose if he would not fail in the supply of this important garden crop. That these kinds are offered under many names is quite true, and not less true is it that they are good. Nuneham Park, Improved Reading, Somebody's "Mammoth," and anybody else's "Prize" are all good so long as they preserve the characteristics of the old sorts, and especially in their keeping properties; but if size is gained at the expense of soundness it is gaining a loss. To have splendid Onions in September for exhibition is but a poor success, unless they are sound in March onwards.

There are probably few gardeners but who can remember some favourite saying of their former tutors. It may have been uttered in the broadest vernacular, and have at the time provoked a smile, yet further time may have proved its truth, and now in mature years we admit its usefulness. A favourite boast of one of my tutors, a hard-headed and kind-hearted Yorkshireman, was—"Haave grown Onions for fifty year, an hav niver mist a crop, an ha niver grew nout but t' Broon Gloab, an ha niver sal." Another chief, whom I need not mention, relied on the White Spanish. I once presumptively ignored both their teachings, and "went in" for something "distinct;" but "never more." I that year bought Onions out of my own pocket to supply a nobleman's house and save my own credit, but again—"never more," for I have since and

for many years divided my ground between the two old varieties named, and I have always had Onions when anyone else had them, and by adhering to them as my staple sorts for spring sowing I am sanguine that I shall not fail in my supply.

Now Brown Globe is James's Keeping, and White Spanish is represented in the names given above. The finest type of the former that has come under my notice is Magnum Bonum, and Bedfordshire Champion is but another name for Brown Globe. The White Globe is a good Onion, and so is the Deptford or old Strasburgh; they may, indeed, be as good, but they are not better than the sorts named. A good Onion different from any of the above varieties I have also found reliable—good in size, appearance, and keeping properties—I mean Danver's Yellow. This when obtained true is an excellent sort, and partakes somewhat of the nature of the White Spanish and the Brown Globe. Quite sufficient names are now mentioned to include the most useful sorts, unless a red Onion is required, and the best in this section is the Red Wethersfield.

As to the quality of Onions, I believe it to be mainly governed by culture—I mean as to mildness or pungency. Dark-skinned are generally more pungent than light-skinned Onions, and small are more pungent than large bulbs. The longer Onions are kept in a growing state, provided they are growing freely, the larger are the bulbs and the milder their flavour. This is instanced by the Spanish Onions, which I am informed are sown under glass in December and transplanted in April to insure a long season of growth. I know that this is important if large-sized bulbs are specially desired; and the finest that I have grown (for exhibition) were obtained by sowing a few seeds on square turves, thinning the seedlings out to the best plant in each square, and planting the turves at the end of April. Previously they had been placed on a gentle hotbed under glass, and were attended to as to watering, ventilating, and hardening the same as other tender plants. These Onions attained to a large size, and were never attacked by the grub. That, however, is a "fancy" mode of culture only applicable to "fancy" purposes.

Another mode of culture which I have occasionally adopted may, perhaps, also be called a fancy mode; it has, however, proved really useful, and especially where carried out in a garden very prone to grub ravages. In this garden I found it almost impossible to insure a crop of Onions by the ordinary mode of sowing the seed in drills and thinning the plants, and the bulbs that escaped the grubs were usually small. I therefore sowed the seed on a slight hotbed of leaves in February, protecting the plants first with glass and subsequently with mats, and had stout plants for transplanting at the end of April. I thought that as my winter Onions were seldom affected with the grub I would adopt the same mode of transplanting strong plants from seed sown in spring. The plan proved quite successful, and produced a full crop of fine bulbs when previously miserable crops had been the rule. The plan is neither tedious nor expensive, and the value of the crop produced by it is well worth the trouble.

But, of course, when the soil is naturally favourable for the growth of Onions, and where the maggot is not troublesome, it is only necessary to sow the seed in drills a foot apart, and thin-out the plants in the usual way, or perhaps not quite in the usual way, for I fear it is much too common to allow the plants to remain too long before they are thinned, than which no practice is more prejudicial to the crop. If the young plants are suffered to grow so large before being thinned that the plants which remain fall down for the want of support the crop is practically ruined, and no special care can atone for past neglect; besides, the practice is really wasteful, for in drawing-out tens of thousands of large healthy young Onions we draw out probably half the nutriment that would suffice to perfect the crop were it left to support a proper and reasonable number of plants timely thinned. Onions should always be thinned before the plants touch each other, and when the plants that are left do not miss either the shelter or the proping-up of their neighbours. Thinning is a very simple matter, and as such it is apt to be overlooked, but it is not the less important; indeed, so important is it that many crops are ruined by the want of timely attention to this necessary work.

Onions delight in a deep, rich, and firm soil, and those who have a soil of this nature are seldom troubled with the maggot. I mean by firm a naturally heavy soil. The importance of having firm soil for this crop is generally admitted, and the work of treading the soil previously to sowing the seed has become a habit. Light soils cannot be too firmly trodden, but

some soils are so heavy, close, and firm that the treading of them is ridiculous, even for Onions. In very heavy soils a little special care is often requisite in sowing the seed, for if a quick free growth of the plants can be obtained in their early stages their aftergrowth is easy. In ungenial soils it is true economy to draw the drills 4 inches deep instead of 1 inch, and sow 3 inches of lighter soil in the drills before sprinkling in the seed, and then cover it with similar light soil. Wood ashes, decayed leaves and vegetable matter, old tan, and general garden refuse are invaluable for starting small seeds in heavy soils. It is only those who have proved the value of that practice who can fully appreciate its usefulness in producing a crop of Onions, and it is equally applicable to other seeds. In light soils that practice is not necessary, and it is on light soils in dry districts that the real difficulty of Onion-growing is experienced. The plants grow freely enough for a month or so, and then comes the grub; and when once the crop is virulently attacked, he is an able man who conquers the maggot and preserves the crop, and is far more deserving of a medal for his efforts than he who obtains one for a row of fine-foliated plants at a fashionable exhibition.

In cultivating the Onion in a garden where the maggot is unusually destructive, I can only find safety in preventive measures. First of all it is requisite to induce a quick unchecked growth of the young plants, and the common obstacle to this is the heat and drought of June. I find for counteracting the heat and drought common salt to be of great value, and do not hesitate to dig it into the ground at the rate of three bushels to a rod in the autumn, and I find its cooling properties and moisture-attracting nature highly suitable to this crop in a light soil. In the spring, a day or two previously to sowing the seed, I dig the ground again, and afterwards make it firm. As soon as the young Onions appear the hoe is set to work amongst them, and they are weekly sprinkled with soot, and occasionally, and slightly, with nitrate of soda and guano. This stimulates the plants, and perhaps causes a small distasteful to the Onion fly; at any rate, the practice generally secures a crop. Before adopting it I could not succeed, and when the young Onions have been stricken by the maggot I have not been able to destroy it without also very nearly destroying the plants.

I do not find early sowing advantageous, unless by an unusually favourable season the plants receive no checks by late frosts. I have sown Onions every week from the 1st of March to the 1st of April, and find, taking the seasons at an average, that the last-named date is the safest for my dry light soil and grub-infested garden; but no plan is equal for evading the maggot to the one above alluded to of raising plants under protection, and having them strong for transplanting in the first favourable weather of spring. I find that it is useful to sow a few rows of the Silver-skinned or Queen Onions for the production of a few early bulbs, relying on White Spanish and James's Keeping for the general supply.

A word may be added on the storing of Onions. The bulbs are often left in the ground too long. They should be pulled-up immediately after their summer roots have withered, for the first shower falling after this time will cause the bulbs to emit fresh roots at once, and when this is the case the keeping properties of the Onions are greatly impaired. When taken up at the proper time and dried quickly they cannot be kept in too cold a place. Provided the bulbs are dry they will defy injury from any frosts which occur in Britain. My proof for this assertion is that I have known them to endure frost when the thermometer was 7° below zero, and no damage was done to the bulbs.

The great value and importance of this crop, and I think I may say its neglect by writers, who generally "fly at higher game," have induced me to jot down these my experiences.—
R. FISH'S PUPIL.

GLADIOLUS DISEASE.

AMONGST the theories that have been advanced on this subject is that it is the result of exhaustion of the bulbs in our unsuitable English climate. It is a theory I have always combated as unsound, and I think the example I now send fully bears me out in my opposition to it. The corm which accompanies this has been forwarded to me by my friend Mr. Banks of Sholden Lodge near Deal, our largest and best amateur grower. It is one which he received from France this autumn of Miriam, a new variety that has been planted in English soil, but which is as badly diseased as any English-

grown one that could be found. He sent me two bulbs: the other I shall submit to the Scientific Committee of the Royal Horticultural Society next week.—D., *Deal*.

[The corm was more than half decayed, and covered with parasitic fungus.—Eds.]

SERICOGRAPHIS GHIESBREGHTIANA.

Most useful is this plant for affording a supply of sprays for vase and other modes of indoor decoration during the dull months of autumn and winter. Equally useful also are the plants for conservatory and dinner-table decoration during the same period of the year. It is seldom that this plant is found cultivated in large numbers after the manner of Poinsettias, but it is well worthy of being so grown for its glossy leaves, and the lightness and brightness of its feathery spikes render it an admirable associate of plants of rigid habit and stately form. The soft scarlet of its flowers is a colour which is pleasing, and well-grown plants are worthy objects of admiration.

The cultivation of this plant calls for no special skill, it being as easy to grow as a Pelargonium and as certain to flower when its season arrives in October, when it continues in beauty for three or four months. Cuttings inserted at the present time, and the plants grown on the shelf of a stove until May, potting and stopping them as required, and placing them in frames in June to make their summer growth, will be attractive plants in the autumn, when they should be arranged in a warm conservatory.

After the flowering season is over water should be withheld to facilitate the ripening of the shoots, when the plants may be cut down, the soil be shaken from the roots, and be treated precisely as are show Pelargoniums, with a little warmer temperature and moister atmosphere. Plants are thus produced 3 feet high and through, huge globes of scarlet sprays.

A suitable compost for the plants is a mixture of loam, peat, and leaf mould in their early stages of growth, finally potting them in richer soil by substituting decayed manure for the peat. I fear that this useful plant is not cultivated so extensively as its merits deserve, and hence I ask the insertion of these notes.—A CONSERVATORY FOREMAN.

THE TREE PEONY.

How is it that the now numerous and beautiful varieties of *Pæonia Moutan* are so seldom seen in our gardens? I saw some last summer in the old gardens at Hampton Court blooming very freely in the sheltered borders; and on visiting Balvoir was delighted to find a noble specimen growing and blooming profusely at the end of the range of vineries. Apart from its use as a half-hardy perennial, however, it deserves

special attention for pot culture, and for the spring or early summer decoration of the warm greenhouse or conservatory.

This plant is said to grow wild in northern China, and is largely cultivated by the Chinese florists, who have raised numerous very distinct seedling varieties. Other very handsome seedlings have been raised in this country, and also on the Continent, especially at Ghent, so that a good collection may now be formed of nearly all shades of pink, flesh, purple, straw colour, yellow, crimson, and white, and some of these are very delicately perfumed.

It is difficult to imagine more attractive pot plants than these, and their culture is as simple as that of an *Azalea* or other Chinese shrubs.

They are generally propagated by grafting a shoot, inlaying or cleft-grafting on a thick piece of the root of the common herbaceous *Pæony* (*P. officinalis*); but cuttings root freely in the spring if placed in a close propagating case. New forms are readily raised from seeds, but artificial fertilisation is generally necessary to secure good results. The quickest, and for many the most satisfactory plan, is to order a dozen or two of the best varieties from any respectable nurseryman who grows these plants for sale; and whoever once gives them a fair trial for conservatory decoration in the spring will never care to be without them. The flowers look best on the plants; but for large drawing-room vases they are very attractive.—(B., in *The Gardener*.)

CARNATIONS AND PICOTÉES.

In addition to those which "D." of *Deal* recommends are the following, than which there are no better:—In Carnations Sir J. Paxton (*Ely*), s.b.; Lord Eaglan (*Bowers*), c.b.; Lord Milton (*Ely*), c.b.; Falconbridge (*May*), p. and p.b.; Squire Meynell (*Brabbins*), p.r.; Juno (*Baldon*), p.r.; Premier (*Millwood*), p.r.;

Clipper (*Fletcher*), s.r.; John Keet (*Whitehead*), s.r.; Maid of Athens (*Ely*), s.r. In Picotées John Smith (*Bowers*), h. red; Princess of Wales, m. red; Mrs. Summers (*Simonite*), heavy purple; Ann Lord (*Lord*), light purple; Mrs. Lord (*Lord*), heavy rose. The above are all equal to any sorts which "D." of *Deal* mentions, and many are superior. They possess good constitutions.—GEORGE RUDD, *Bradford*.

EARLY WRITERS ON ENGLISH GARDENING.

No. 11.

REV. JOHN LAURENCE.

To the close of the seventeenth century from the earliest period of Christianity its clergy were the chief promoters of the arts and sciences, and the authors and preservers of their literature. Gardening is not an exception to that rule. Gardeners in those times were totally illiterate, and to the clergy then living we are indebted for the only publications that im-



Fig. 79.—SERICOGRAPHIS GHIESBREGHTIANA.

parted instruction in horticulture to their contemporaries, and that have preserved to us a record of their practice of the art. Of these clerical horticulturists the first of superior attainments known to us is the Rev. JOHN LAURENCE, and anyone even now taking his "Clergyman's Recreation" and "Gentleman's Recreation" for his guides would not be led into faulty practice. Those works tell the results of his experience during more than twenty years, and he observes, "Most of the time I can spare from the necessary care and business of a large parish, and from my other studies, is spent in my garden and making observations towards the farther improvement thereof, for I thank God this sort of diversion has tended very much to the ease and quiet of my own mind; and the retirement I find therein, by walking and meditation, has help'd to set forward many useful thoughts upon more divine subjects, as I may perhaps hereafter have occasion to inform the world. In the meantime I cannot but in-courage and invite my reverend brethren to the love of a garden, having my self all along reap'd so much fruit from it both in a figurative and literal sense." He was born at St. Martin's, Stamford Baron, Northamptonshire, of which his father was the incumbent, in 1668. He was admitted B.A. of Clare Hall, Cambridge, in 1688, and was presented to the rectory of Yelvertoft in Northamptonshire in 1708, previous to which he had become M.A. To the cultivation of the garden of the rectory house he assiduously applied, and though its soil was shallow and on the worst description of subsoil—viz., a white clay, in three years he grew in it some of the choicest fruit. In 1721 he moved to the rectory of Bishop's Wearmouth in the county of Durham. In 1728 he was a prebendary of Salisbury. He says that he pursued gardening "by way of diversion, not at all interfering with, much less interrupting his proper studies," and an evidence of that is before me. His "Christian Morals" and "Christian Prudence," published in 1720, are volumes worthy of a clergyman, and to be read with pleasure and advantage.

His first publication relative to gardening was "The Clergyman's Recreation: showing the Pleasure and Profit of the Art of Gardening," which passed through six editions between the years 1714 and 1726. The completing portion of this work is entitled "The Gentleman's Recreation, or the Second Part of the Art of Gardening Improved." Of this three editions appeared between 1716 and 1728.

His "Fruit Garden Kalendar: Teaching in Order of Time what is to be done therein every Month in the Year," was published in 1718, and I am not aware of any subsequent edition.

The three volumes had as their publisher Mr. Bernard Lintot; and when in 1726 Mr. Laurence published in a folio

volume "A New System of Agriculture: being a Complete Body of Husbandry and Gardening," Lintot asserted that in different words it contained what Mr. Laurence had previously sold to him in the form of "The Clergyman's and Gentleman's Recreation." This assertion is not true, for the "System of Agriculture" includes farming and every department of gardening, whereas the "Recreations" are restricted exclusively to fruit culture. The following are a few unconnected extracts from its pages:—

"I was the first and almost only writer in the last century who had revived the spirit of gardening."

"By the bounty of the Bishop of Durham I have been re-

moved (very agreeably) into his bishoprick, which may properly be called *The Garden of the North*."

"Superstition often governs where it should not; but the good wife will keep to her old mumpisms of an odd egg when she sets her hen, but let grafting be performed 'without any regard to weak and groundless superstition of the age of the moon.'" Some of the names spelt differently from our forms of spelling are Philbud, Golden Benating, Sallery. It is startling to find that the chapter entitled "Reptiles or the Lowest Vivacious Flowers" relates to the Auricula, Polyanthus, Hepatica, Violet, and such dwarf plants. "The Winter Bon Chrétien is remarkable for keeping longest, and all the sorts of them are as remarkable for answering so well the purport of their name, Bon Chrétien, or Good Christian, sound at Heart (the right sort, alas! hard to be met with), for as in time they begin to decay and rot in the outward parts or pulp, so it is observ'd that the core or heart continues generally sound to the last."

In 1728 appeared his last publication, a poem entitled "Paradise Regain'd, or the Art of Gardening." It is a pamphlet of only fifty-nine pages. There is no author's name on the title, and we have doubted whether he was the author, for in it he describes his cottage on the bank of the Thames near Claremont—

"Hereon my globe and mansion situate,
In compass small, afford no mean retreat.
Through some ill fate they long neglected lay,
In which condition all things felt decay;
The gates unknick'd, the palisades down,
Were all defenceless, like dismantled town.
The globe was rude throughout, and cover'd o'er
With weeds, in sad confusion, nothing bore."

He then relates how he restored the garden to order, what flowers and trees he introduced, and also bees, concluding with these four worthy lines—

"Those that were innocent before too wise,
Were gard'ners made, and plac'd in Paradise:
Oh! may I count what disobedience cost,
And innocence regain where once 'twas lost."

Mr. Laurence died at Bishop's Wearmouth May 18th, 1782,



Fig. 80.—REV. JOHN LAURENCE.

and was buried in the chancel of its church. It was erroneously stated in the "Gentleman's Magazine" that a stone with an inscription was placed over the grave, and some years subsequently the stone was turned and another inscription cut on the other side. But a memorial has recently been placed in the chancel by one of his descendants, Richard Laurence Pemberton, Esq. He is represented by the families of Pemberton, Goodchild, and Dale, which last-named family has recently become extinct. Mr. Pemberton possesses the original portrait of Mr. Laurence and his wife Mary, who died in 1746; also several articles of plate which belonged to him, including a handsome tankard with his arms, and crest, and initials. The name is sometimes spelt Lawrence, but we retain the u, as it appears in his "New System of Agriculture," and as still do the family's representatives.

DO RABBITS EAT LILIUMS?

In the spaces in groups of shrubs we have varieties of the following species of Liliium—viz., *croceum* (aurantiacum), *davarium* (umbellatum), *candidum*, *longiflorum*, *martagon*, *superbum*, and *pyrenaicum*, with *auratum*, *speciosum* (lanceifolium), *Humboldtii*, and *tigrinum*, in positions to which rabbits and hares have free access, and I do not remember any injury having been done to the Liliiums by those animals. Liliiums do remarkably well in *Rhododendron* beds, and neither plants suffer damage from hares or rabbits. I may mention that both rabbits and hares abound here, the timid hare being bold enough to take every bit of grass and stem down to the soil of over a hundred Carnations of the tree kinds, many over a yard high, in a position opposite a potting shed—the domicile of two cats, and not a dozen yards from the shed. Bold indeed are hares and rabbits in seeking to satisfy their cravings for dainty morsels. The daintiest fare to set before hares is a free-growing succulent Carnation, and in shrubs they seem to prefer *Skimmia japonica* to all others.

I have been often surprised at the remarkable scrutiny of hares, and especially rabbits, exercised upon any plant introduced to their sporting and feeding ground. These animals never fail to test the foliage of any introduced shrub or the bark of a tree, whether it be had from a distance or merely transplanted from one part of the grounds to another. Last spring we moved a quantity of common Laurel, which had not been interfered with for years, to from 2 to 400 yards only distant from their old positions, and during the past winter the Laurels have been denuded of foliage and the stems and shoots as bare of bark as a flagstaff, which the animals did not touch in their former quarters. Great novelty-admirers are hares and rabbits, admitting nothing of any kind in the herb way to pass without a testing of its quality. If the subject introduced be relished speedy execution ensues, but if distasteful the nibbling will be less and less, and ultimately abandoned. Hares and rabbits—what a liking they have of barks! Not *Cinchonas* of course, but of *Rhus cotinus*, "aromatic and astringent," says Dr. Hogg in his "Vegetable Kingdom," page 241, "enumerated as one of the substitutes for Peruvian bark." Quite as partial are they to the bark of *Rhus typhina*, one of the highest astringency, followed by *Ash* (*Fraxinus excelsior*), its "astringency and bitterness" causing it to have "been used as a substitute for Peruvian bark."

Of the young shoots or small branches of *Ash* hares and rabbits have an uncommon liking in hard weather. To strew the branches of that tree near to recently-planted plantations in severe weather may be a means of attracting the animals to them, and mitigate the severity of their attacks on the fresh-planted trees, accompanied by a little hay and some Mangolds, with Turnips, the freedom of the plants from attack will show the "penny-wise-and-pound-foolish" policy of the non-feeding as compared with the feeding practice. Our experience is that these animals will eat of most trees and shrubs, but they do not eat Liliiums.—L. AND L.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

SACCOLABIUM HENDERSONIANUM. *Nat. ord.*, Orchidaceae. *Linn.*, Gynandria Monandria. Flowers pink.—"It was imported from Borneo, and flowered in 1874; but Dr. Reichenbach states that it has been in Europe ever since the year 1862."—(*Bot. Mag.*, t. 6222.)

SEDUM PULCHELLUM. *Nat. ord.*, Crassulaceae. *Linn.*, Decandria Pentagynia. Flowers purplish pink.—"It is a native of the mountains of the United States, from Virginia to

Georgia, growing in rocky places. Sent by the Rev. Mr. Ellacombe from his rich and admirably named collection at Bitton Vicarage between Bristol and Bath, one of the most favoured climates and soils in Britain for a general collection of the herbaceous plants of temperate climates, and of which advantages its accomplished occupant makes the best use. It flowers both at Bitton and Kew in July, and must not be confounded with two plants commonly known in gardens as *S. pulchellum*—namely, *S. sexangulare* and *S. Lydium*."—(*Ibid.*, t. 6223.)

HYPOESTES ARISTATA. *Nat. ord.*, Acanthaceae. *Linn.*, Dindria Monogynia.—"The genus *Hypoestes* consists of some forty South African, Indian, and Australian plants, many of them weedy in habit and far from attractive in flower, to which, however, the present forms a conspicuous exception, being remarkable for its bright purple flowers, which are produced in profusion, and are prettily striped and spotted on the upper lip. It is a native of extra-tropical South Africa from Algoa Bay to Natal, and is common in shrubberies, where Forbes collected plants for the Horticultural Society in the year 1822. It would no doubt form an attractive warm greenhouse plant if properly treated as to wintering, for, like all Cape plants, it must have a season of almost absolute rest. It flowered at Messrs. Veitch's establishment in February, 1874."—(*Ibid.*, t. 6224.)

AINSLIEA WALKERI. *Nat. ord.*, Compositae. *Linn.*, Syngenesia Superflua. Flowers white.—"A most graceful little plant, belonging to a very little known genus that inhabits the mountains of North-eastern India, China, and Japan, and of which only one species had been found in Hong-Kong until the discovery of this species by Capt. A. L. Walker when Brigade-Major in the island. Both species are instances of the wonderful localisation of the plants of that little island, which has been so well discussed by Bentham in his *Flora of Hong-Kong*. *A. fragrans*, the kind already described, and which has broad radical leaves, has been found on Victoria Peak, where it is so rare as to have been gathered by only one collector. The exact locality of *A. Walkeri* is not known, but as it has escaped the notice of such keen collectors as Champion, Hinds, Hance, Wright, Seeman, Willford, and others, it cannot but be very rare and local. Though only containing twenty-nine square miles, the diminutive island of Hong-Kong contains upwards of one thousand native species of flowering plants and Ferns, which is only one-third less than the British Islands possess. Many of the most striking of these are more rare even than the *Ainslieas*. Thus, speaking of the trees, Bentham states of one that only three trees of it are known in the island; of another that it was seen but once; and of a third that its existence is only known from a specimen picked out of a faggot of wood which a Chinaman was carrying home! Such facts as these, coupled with Capt. Walker's discovery of this *Ainsliea*, render it more than probable that not a few novelties still lurk in this little British possession. *Ainsliea Walkeri* was communicated by Mrs. Walker of Chase Cottage, Enfield, with whom it flowered for the first time in December last, the plant being then three years old."—(*Ibid.*, t. 6225.)

DENDROBIUM FUSCATUM. *Nat. ord.*, Orchidaceae. *Linn.*, Gynandria Monandria.—"*D. fuscatum* was first known from specimens collected by Dr. Hooker in the hot valleys of the Sikkim Himalaya and the Khasia Mountains in 1848-1850, where it is far from uncommon. A fine drawing of it (by a native artist) exists in the Cathcart collection of Himalayan plants at Kew, and represents many racemes from one stem, one of which has fifteen flowers, all of a deep orange, almost orange-brown. It flowered in the garden of F. Curry, Esq., F.R.S., Sec. L.S., in April, 1864, and was imported, we believe, from the Khasia Mountains."—(*Ibid.*, t. 6226.)

ALLIUM ANCEPS. *Nat. ord.*, Liliaceae. *Linn.*, Hexandria Monogynia.—"Remarkable for its dwarf habit, broad, flat, acutely-angular stems, and very dense umbels of bright purple flowers with acute segments. It inhabits the Sierra Nevada portion of the Rocky Mountains, both upon the Californian and Nevada sides, at an elevation above sea level of from 4 to 5000 feet, and of course, like all the other known species of the genus—now, according to Dr. Regel's estimate, above 250 in number—is quite hardy in England in the open air. With Messrs. Veitch it flowered in May, 1875."—(*Ibid.*, t. 6227.)

PLUM.—*Rivers's Blue Prolific.*—"Our specimens of this amazingly prolific Plum were sent to us by the Rev. W. F. Radclyffe as *Rivers's No. 4*, and we have since ascertained from Messrs. Rivers & Son that this No. 4 is to bear the name above

adopted. The numerous branches sent by Mr. Radclyffe were all heavily laden with Plums; the branches, long and short, were all literally crowded, and this, we are informed, is the general character of the tree. The fruit is below medium size, about $1\frac{1}{2}$ inch long, and rather over an inch in diameter, oval, slightly narrowed to the stalk, and with a shallow suture. The skin is of a dark purple colour, covered with a thick blue bloom. The stalk, half an inch long or more, is set in a shallow cavity. The flesh is dull greenish-yellow, juicy, adhering to the stone, with a brisk and agreeable flavour. It is a good culinary Plum, ripening about the middle of August, and the tree is very hardy and a great bearer."—(*Klor. and Pom. 3 s., ix., 89.*)

OUR BORDER FLOWERS—WHITLOW GRASS.

A widely scattered race of plants, many of them well adapted to all purposes that flowers can be applied to. Some of them are especially suitable for spring garden decoration. *Draba verna* as seen on a sunny morning in spring, to me at least, is a charming sight. *Draba muralis* is of much larger stature, and is met with often on ballast hills and railway embankments, but is worthy of a place in our borders. *Draba incana* is a desirable plant for the manner its seed pods are twisted, and is only to be met with in elevated localities; but these must give place to others of the family that are in possession of more attractive properties.

As a spring-blooming plant *Draba aizoides* may have many rivals, but it will hold its own against all comers. I think it is one of the best of the race, being of dwarf habit, grows freely, bears a good deal of rough usage, is of a pretty yellow colour, continues in bloom for a length of time; it seeds freely, and all the better for being often transplanted, and is useful alike for indoor decoration, bed, border or rockery. *Draba rupestris* is a native of Scotland, of dwarf habit, with yellow flowers; it blooms late in the spring, and is a useful plant for the rockery. *Draba botryota* or *aizoon* ought to be met with more frequently than it is. Then we have *D. ciliaris* from Switzerland—and what a sight to see this gem in its native home!—and others from the same region. *D. alpina*, if not so showy as some others, is desirable as a rock or alpine plant. There are many others that might be enumerated of this desirable family.

All the species are of easy cultivation. The herbaceous kinds are increased by seed and division. The seed may be sown in the spring in sandy soil placed in a cold pit or frame. When the plants are large enough they must be carefully pricked out and attended to as they require. Division may take place either in spring or when the plants have done blooming. They are not very particular as to soil; sandy loam and peat, with a little leaf mould, with good drainage, and water when they require it, with a sunny aspect, will afford them a favourable medium to develop themselves in. It is to be regretted that these plants are so seldom met with.—*VERITAS.*

EFFECT OF TREES IN AUTUMN.

In answer to "A LOVER OF THE BEAUTIFUL," we recommend the perusal of a very excellent volume entitled "The Natural Principles of Landscape Gardening; or, Adornment of Land for Perpetual Beauty." The author is Mr. Joseph Forsyth Johnson, Curator of the Royal Botanic Gardens, Belfast. The following extracts are applicable to our correspondent's questions:—

TABLE OF SPECIAL EFFECTS OF TREES AND SHRUBS.*

WINTER DIVISION.		
Oct., Nov., and Dec.	Dec., Jan., and Feb.	Feb., March, and April.
<i>Pyrus</i> , scarlet berries <i>Betula</i> , of sorts* <i>Betula</i> , various* <i>Cedrus Libani</i> <i>Arbutus</i> , of sorts (F) <i>Garrya</i> , of sorts (F) <i>Azalea Ghent</i> var. [scarlet leaves] <i>Althaea frutex</i> <i>Coronilla Emerus</i> <i>Monthly Roses</i>	Evergreens are now the principal effects, and possess many distinctive beauties. <i>Laurustinus</i> <i>Jasminum nudiflorum</i> <i>Andromeda</i> , of sorts (F) <i>Coreborus japonica</i> *	<i>Amygdalus cochinchinensis</i> <i>Persica</i> , of sorts [April] <i>Sambucus</i> , golden foliage in <i>Acer</i> , do. <i>Populus</i> , do. <i>Abelia floribunda</i> <i>Berberis</i> , of sorts (F) <i>Cydonia japonica</i> <i>Forsythia</i> <i>Furze</i> <i>Daphne</i> , of sorts <i>Mahonia</i> , of sorts (F) <i>Ribes</i> , of sorts <i>Fernox</i> , of sorts

* Names marked thus (*) continue their effects until May. (F) means permanent or evergreen.

"AUTUMN EFFECTS."

"The hues worn by the trees in autumn have already been alluded to. The Maples, Scarlet Oak (*Quercus coccinea*), and others, assume the very richest tints. As on a soft bright day we survey some woodland scene, bathed in golden sunshine, with leafage all aglow, it would almost seem as though some high festival of Nature were in preparation to celebrate the happy fruitions of the year.

"Different varieties of what are termed Ghent Azaleas impart a very pleasing autumnal warmth by their leaves giving a bright scarlet; while among others the *Althaea frutex* displays its pretty blossoms even as late as October and November.

"The Rose, commonly termed Monthly Rose, in mild seasons and in sheltered situations will yield abundant flowers throughout October, November, December, and January. In most gardens a place suitable for these plants can be found. It will often prove advantageous to have some early *Chrysanthemums*, in spots not too conspicuous, however. Large groups of *Tritoma Uvaria* afford an excellent display, and, when in good condition, the foliage proves effective during a great portion of the year. The flowers themselves, indeed, are very handsome, and often a single plant will present as many as thirty spikes at one and the same time. Many places may be suitably occupied by these plants, which harmonise well with more permanent growths. The *Viburnum Tinus*, the *Andromeda floribunda*, and others, assist the autumn and winter effects.

"The coloured stems of some trees—the Salices, for example, and the *Betula alba*—often help to brighten our winter landscape. The scarlet Dogwood (*Cornus alba*), is excellent in park scenery. There are very good masses of this plant at Caledon Park, Armagh. The *Deutzia crenata flore-pleno* has a pale yellowish bark in winter, and much variety in this respect subsists amongst deciduous growths. The *Jasminum nudiflorum* are of great importance as regards the winter effects of climbers."

MANURES FOR POTATOES.

For most soils and in average seasons farmyard manure must be the base. The only exceptions are soils very rich in humus, and these, except in gardens, are few. Ten to fifteen tons of manure per acre ploughed-in in the autumn and supplemented in the spring at planting time with fertilisers is a sound principle to work upon. In wet strong lands the supplement may consist of fifty to one hundred bushels of lime per acre, with artificial fertilisers as a top-dressing. The land which grows the greatest crops of the best quality, and continues to do so under a series of many years' cultivation, is warp, and which contains a large natural admixture of gypsum, supplying lime and sulphuric acid, which, taking tuber and haulm together, form the largest proportion of the components of the Potato. On most soils farmyard manure in autumn, in quantity varying with the poverty or richness of the land, and a spring dressing of 2 cwt. of superphosphate, 1 cwt. of potash salts, and 1 cwt. of nitrate of soda per acre, will be found a profitable application.

But another manure seldom recommended is found, taking into consideration bulk of yield, and comparative freedom from disease, to be a valuable assistance to Potatoes with or without dung—namely, kiln-dust. This on medium and heavy loams has proved itself, taking one season with another, a most reliable application in sound Potato production judged in comparison with other dressings. No manure is found to produce such uniformly valuable crops year by year as ten to twelve tons of farmyard manure applied in the autumn, and one ton of kiln-dust spread-in with the sets at the time of planting. As an instance of its value, a cottager's allotment became vacant in a field of sixty occupants, which was planted with Potatoes, receiving as a dressing kiln-dust at the rate of $1\frac{1}{2}$ ton per acre. In the field other plots were manured with guano, nitrate of soda, superphosphate, and farm or pig manure in liberal quantities; but incomparably the best plot in the field was the one under kiln-dust. The plants kept their foliage healthy the longest of any, and disease was scarcely to be seen. The next best plot received at the rate of 10 tons of pig manure per acre, and a further dressing of 2 cwt. of nitrate of soda.

It would be instructive if others could communicate their experience with kiln-dust as a manure for Potatoes, or could mention any other fertilisers which have added to the value of this important crop.—J. M., *Yorkshire.*

The first Exhibition at the Royal Aquarium, Westminster, which opens on the 12th inst., is being anticipated with a considerable amount of interest. The schedule is judiciously

drawn up, and includes not only plants and flowers in season, but also fruits and vegetables. The prizes are on a very liberal scale—more than usually so in some of the classes—no less than £56 being offered for *Cyclamens*, £24 for standard *Azaleas*, and £54 for *Orchids*. *Rhododendrons* are also well provided for, and in all the classes the prizes are tempting and substantial.

THE LOVE OF FLOWERS.

THE interest which flowers have excited in the minds of mankind from the earliest ages to the present day has never been confined to any particular class of society or quarter of the globe. They appear to have been scattered over the world as a medicine to the mind, to give cheerfulness to the earth, and furnish enjoyment to the inhabitants. The love of flowers commences in infancy, and increases with increasing years, and continues to old age.

The taste for flowers was never so universal and widely spread as it is at the present time; it prevails among all classes, from the humble possessor of a few pot plants in city or town to the owner of "broad acres" in the country. We are assured by innumerable proofs that flowers have endless charms. The earliest annals of our race attest the power by which these beautiful objects have added to our enjoyments or assuaged our sorrows. The toiling clerk and the hard-worked artisan participate in their pleasures, and bestow on their modest garden beds their leisure moments, deriving health and delight from these willing cares.

Our public parks and gardens have been adorned with the vegetation of the tropics, and from all parts of the globe these floral treasures have come. Those rich gifts from other climes, gathered together in our own gardens in summer, have fostered a wholesome love of flowers, and stimulated their culture in private gardens, and have added to the attractions of numerous homes; for such plants, as Keble has well said—

"Need no show of mountains hoary,
Winding shore or deepening glen,
Where the landscape in its glory
Teaches truth to wandering men.
Give true hearts but earth and sky
And some flowers to bloom and die;
Homely scenes and simple views
Lowly thoughts may best infuse."

—N. COLE, *Kenington Gardens*.

HARDY VINEYARD AT CASTLE COCH, NEAR CARDIFF.

PERHAPS it will interest the readers of "The Gardener" to know that the Vines growing at Castle Coch in the open have ripened their first season's growth very well, although the summer was a cold and wet one. Most of the Vines had grown to the top of their stakes early in the autumn, and continued to grow and carry their foliage green and healthy till nipped by the first frost. At this time I had some doubts as to the wood being properly ripened, in consequence of the foliage keeping so long green. However, on pruning them on the 6th ult. my fears were dispelled on finding the canes properly ripened for more than a half of their entire length. I cut them down to within two buds of the ground.

The canes are not very thick, but they are solid, with scarcely any pith to be seen; the buds are prominent, and, to all appearance, will break strongly next year. *Melior Blanc* (white) is a stronger grower than *Gamais Noir* (black). I purpose striking some hundreds from cuttings—not from eyes, as I did last year—in the same way as we strike Gooseberry cuttings.

If any of your correspondents would like to try a few cuttings of these hardy French varieties I shall be happy to supply them.

The Vines on the Castle wall here have made excellent wood, and ripened it thoroughly.—A. PETTIGREW, *Cardiff Castle*.—(*The Gardener*.)

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

GARDENERS complain very much this season about their work being behind. So far the weather has been all against doing much work in the open ground; now we have a very pleasant change, the weather is warmer, and the ground is sufficiently dry for working. Our own work is well forward. The earliest

crops so far do not look over-promising, but with the pleasant change in the weather all vegetable crops will make good progress. The ground is still very cold, and any seeds that have been sown are taking a long time to vegetate. We never saw Peas lie so long in the ground before they showed above it as the second sowing. Under such circumstances even good seeds are likely to be injured, and the seedsman may be blamed when it is only the cold wet ground that is in fault.

We will sow seeds of *Seakale* this week. We have found that it is not safe to trust altogether to planting the old roots that have been forced, we find that those plants raised from seeds are better. It is necessary to sow early in the season, sowing the seeds in drills about 15 inches apart, and the seeds must be sown very thinly; if the plants are left 6 inches apart in the rows it will be sufficient. The old roots have all been planted. We allow them more room—about 18 inches between the rows, and 9 inches between the plants in the row. Pieces of root from 4 to 6 inches long are the best for planting; the top end of the root should just be covered with soil. We sometimes plant the roots amongst ashes; a little strewn over the crowns is beneficial if the ashes are not used to plant in.

We have tried again and again to grow Broccoli, but only to fall with it. We are not sowing any this year except the ordinary sprouting sort. From now to the end of the month is a good time to sow the seeds. We do not recommend a large selection of sorts, and those who have had much experience in this matter will not require advice. There is one thing, however, that must be taken into account, and that is, that though a variety may do well in a certain soil and situation, the same sort may not succeed quite so well under altered circumstances. To continue the supply for the longest possible period, early, mid-season, and late sorts must be sown. The Messrs. Veitch of Chelsea are sending out a very fine new sort this season, it is called *Veitch's Self-protecting Autumn Broccoli*; the beautiful white heads are quite hidden by the leaves. This with *Snow's Superb Winter White* and the *Walcroft* are the best three for the earliest crop. The selection of mid-season sorts are *Veitch's fine Spring White*, *Penzance Early White*, and *Perkins' Leamington*. For late use we have *Carter's Champion Late White*, *Sutton's Perfection*, and *Wilcox Improved*. Keep-up successional sowings of all the various small salads according to the quantity required.

CUCUMBER HOUSE.

Those who have been reading the details of the work in this department in previous weeks will not require much further instruction. We may still note a few essentials towards their successful culture. At no season ought the plants to be over-cropped, but this would be especially injurious during winter at the time they come into bearing, and when the plants are in vigorous growth they would if allowed bear enormous quantities; and we have seen gardeners careless enough to allow a large crop at first, when in a month or two the effects of it would be plainly visible in the stunted growth of the plants and the inferior quality of the fruit. Keep the leaves free from spider and green fly. "A NOBLEMAN'S GARDENER" states that spider can be killed by fumigating the house with sulphur fumes without injuring the leaves. We have tried it by painting the pipes, and have injured the leaves without killing the pest. We will certainly try the plan recommended by your correspondent. Cucumbers may very readily be grown and planted out in frames after this without much trouble. A gentle bottom heat from manure is necessary to start the plants into growth, and the temperature of the frame is kept up at night by thick coverings.

Oranges in pots now require a high temperature. The fruit requires a long period to ripen—very nearly twelve months. We like a succession of it, and the plants are put into a warmer temperature at different periods to obtain this result. Our earliest plant was in flower in January. Others are not yet placed in heat. The earliest sort is the *Tangerine*. The *Maltose Blood* and *St. Michael's* take six weeks or two months longer to ripen their fruit. When the fruit is set the plants are freely syringed, and in nearly every respect treated as the *Fig trees*. It is not necessary to replot the trees very often—about once in three years, or even less often when the plants are large. A surface-dressing of rotted manure, loam, and charcoal is very good, and it is improved by crushed bones being added to it.

GREENHOUSE AND CONSERVATORY.

At present we have abundance of plants in flower, so that the houses are very gay indeed. *Hyacinths* and *Tulips* that have been allowed to flower without forcing are in full beauty, others that have been forced are in a decaying state; and it is necessary to remove the *Hyacinths* as soon as they show signs of decay to prevent a disagreeable smell in the house: indeed all decaying flowers should be removed at once, and flowering plants should have the flowers neatly fastened to sticks if it is necessary. While attending to plants in flower it is quite necessary to attend to others for succession. Roses that are being gently forced should be placed near the glass, and the atmosphere of the house should be moderately moist. If small drops of water are hanging round the serrated edges of the leaves in early morning it

is a healthy sign. Green fly is very injurious, and must be destroyed at once by fumigating with tobacco smoke. The small brown maggot that attacks the buds can be picked out with a pin or needle.

Stages and other Pelargoniums are throwing up their flower trusses, and are now assisted with weak manure water applied at every alternate watering. The best is cow manure, about a bushel of it soaked in thirty gallons of water and the water allowed to stand for twenty-four hours before using it; this may again be diluted with rather more than half the quantity of pure rain water. All other softwooded greenhouse flowering plants are improved by similar treatment.

It was stated that Cape Heaths were placed out in a cold pit, or rather span-roofed frame. Their removal would have been delayed had we known that the thermometer would have registered 10° of frost; however, the plants do not seem so far to have received any injury. We have placed Camellias in the late vinery that they may make their young growths. The Vines are only just starting into growth, and afford no shelter from the sun; it has therefore been necessary to shade the Camellias. They are freely supplied with water at the roots and syringed twice daily. Epacris and Cape Heaths of the Hymenalis section that have done flowering are now cut back. Those plants that have grown very nearly as large as they are required are cut back to within an inch of where the young wood started last year. Epacris, if it is intended to make large specimens of them, should have the young growths bent round sticks placed in the pots. The growing points of the strongest shoots may be pinched out.

Chrysanthemums require to be potted-on before the plants become root-bound. We are short of room this year under glass, and those plants intended to produce cut flowers for exhibition have been turned out of doors where they are sheltered from south-west winds. It is not well to allow the plants to be injured by frost, but they will stand 7° in a calm night without injury, and we are not likely to have it colder after this. Specimen plants are being trained into shape by sticks placed in the pots or a wire fastened under the rim.

We have a very useful pot sent by Mr. John Matthews of Weston-super-Mare for training such plants. Holes are made through the rim, to which the shoots are fastened by passing a strip of mat through them. This saves the trouble of rings under the rim, and the ties are much easier run through the holes.

FLOWER GARDEN.

The mower has been twice run over the lawn, and the walks are kept smooth and clean. Mixed borders that were dug over in the autumn and winter now require the Dutch hoe to be run through them, and afterwards the borders are made neat by raking the ground. Many gardeners say, "Never use a rake; the rougher the ground is left the better for the plants." In our own practice we do not see much difference in the growths, and when the ground is neatly levelled by the rake the appearance of the borders is much improved. Now is a good time to lift and divide herbaceous plants. If they remain too long in one place the ground becomes exhausted and the flowers are not of such good quality. Bedding plants have been turned out into turf pits, at least all the hardiest of them. Others are in glass structures, where the lights can be removed entirely when it is necessary to expose the plants freely. It is not too late yet to put in cuttings of Verbenas, Heliotropes, Ageratum, Lobelia, &c. All such plants strike very quickly in a hotbed at this season. The late-pruned Roses will probably be the strongest and healthiest this season. Those that started early in the season have suffered much from frost. Auriculas are now coming nicely into bloom. The few mild days that we have had has brought them rapidly into flower. The frames are well covered up at night, and air is admitted very cautiously by day. Cold cutting winds are very injurious to the tender petals. Carnations and Picotees are fully exposed in fine weather; but the lights are kept on when it rains or if it is cold. Beds of Pinks have been hoed and raked. The plants are now starting into growth. Hollyhocks that have been kept in pots or planted out in frames during winter may now be planted out if they have been gradually inured to the weather. Dahlias must be propagated now if a sufficient stock has not yet been obtained. —J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

WESTMINSTER AQUARIUM. April 12th and 13th, May 10th and 11th, May 30th and 31st, July 5th and 6th.

ALEXANDRA PALACE. Flowers, May 5th and 6th. Roses, July 7th and 8th. GLASGOW. May 10th, and September 12th and 13th. Mr. F. Glib. Doughall, 167, Canning Street, Sec.

CRYSTAL PALACE. Flower, May 19th and 20th. Rose, June 16th and 17th. TIVERTON. May 24th and 25th. Messrs. A. Payne and J. Mills, Hon. Secs. MANCHESTER (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.

SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fudge, 89, York Street, Sec.

SOUTH ESSEX (LITTON?). June 18th. Mr. G. E. Cox, Wilmet Road, Leyton, Sec.

EDINBURGH (Scottish Pansy Society's Show). June 16th. Mr. N. M. Welch, 1, Waterloo Place, Edinburgh, Sec.

COVENTRY. June 19th. Mr. T. Wilson, 8, Portland Terrace, Sec. MAIDSTONE (Roses). June 21st. Mr. Hubert Bansted, Rockslow, Maidstone Sec.

FARNHAM AND SOUTH HAMPSHIRE. June 21st. Mr. H. Smith, Sec.

SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.

EXETER (Roses). June 23rd. Mr. T. W. Gray, Hon. Sec.

BRIGATE (Roses). June 24th. Mr. J. Payne, Treasurer.

LEEDS. June 28th, 29th, and 30th. Mr. James Birbeck, Delph Lane, Woodhouse, Leeds, Sec.

WEST OF ENGLAND (HEREFORD). Roses. June 29th. Rev. C. H. Bulmer, Credenhill, Sec.

RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.

FROME (Roses). June 29th. Mr. A. R. Bally Hon. Sec.

MARSDEN. July 1st. Mr. J. H. Edmondson, Hon. Sec.

ROYAL CALDONIAN HORTICULTURAL SOCIETY. July 5th and September 18th.

SOUTHPORT. July 5th, 6th, 7th, and 8th. Mr. E. Martin, Sec.

NEWARK (Roses). July 6th. Mr. F. E. Dobney, Sec.

HELENBURGH (Roses). July 12th and 13th. Mr. J. Mitchell, Sec.

WIMBLEDON. July 12th and 13th. Mr. P. Appleby, 5, Linden Cottages, Hon. Sec.

KILMARNOCK. Roses, July 18th and 19th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.

TONBRIDGE. July 13th. Mr. W. Blair, Hon. Sec.

BRIGHOUSE. July 29th. Messrs. C. Jessop & E. Rawnley, Hon. Secs.

HEWORTH (Horticultural). August 2nd. Mr. R. H. Felton, Hon. Sec.

CLAY CROSS. August 15th. Mr. J. Stallard, Clay Cross, near Chesterfield, Sec.

WESTON-SUPER-MARE. August 15th and 16th. Mr. W. B. Frampton, Sec.

FREESTON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.

BRIGHOUSE. August 16th and 17th. Admire & Naunton, Hon. Secs.

TAUNTON DRAMA. August 17th. Mr. F. H. Woodford, M.D., and Mr. Clement Smith, Hon. Secs.

MIRFIELD HORTICULTURAL. August 19th. Mr. George Senior and Mr. John Bushforth, Hon. Secs.

RAMSGATE (ISLE OF THANET). August 23rd. Mr. R. R. Schartan, Broadstairs, Sec.

SWANSEA BURN. August 26th. Mr. R. Richardson and Mr. W. Elliott, Secs.

DUNDON (International). September 7th, 8th, and 9th. Mr. W. R. McKelvie, 23, Euclid Crescent, Sec.

TRADE CATALOGUE RECEIVED.

LOUIS VAN HOUTTE, Ghent, Belgium.—*Catalogue of Stove and Greenhouse Plants, Bulbs, Roses, &c.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (C. B.).—The prices of books are stated in their advertisements. We do not recollect that of the volume you mention.

ALLAMANDA NERIFOLIA.—"A. R." has gathered a seed-vessel from it, and wishes to know whether it has ripened seed in England.

FIG DR. HOGG'S BLACK (G. S.).—This Fig is not as yet in the market, and most likely will not be before next season. It will be advertised as soon as ready.

RUDBECKIA PURPUREA GRANDIFLORA (R. M.).—Any of the principal florists could obtain it for you.

BOILER (T. C.).—Write to the makers, and tell them your difficulties.

PLAN OF FLOWER GARDEN (H. R.).—We do not think the centre will look well as you have planned it. Madame Vaucher will grow taller than Vesuvius. Instead of the white Geranium we would have yellow Calceolaria Lobelia pumila is rather too dwarf to be next Christine. L. speciosa grows more freely. B, C, D, and E are well arranged. All the others are good combinations.

TREATMENT OF VINES (A Young Gardener).—Remove all the shoots except the strongest one from the spurs, and on the young wood the shoots should be removed to allow of 18 inches between those that remain. Grano should be strewn on the surface of the ground; the waterings will wash it into the soil. Balsam, Calceolaria, Primula, and Cineraria seeds should be sown in May on a slight hotbed.

FORCING VINES (J. T. Blackie).—They may be forced many years in succession without being injured by it; but if they are forced very early the Vine is thereby weakened, and will not produce heavy crops. Vines may be forced for two years, and the crop would not be lost if they were not forced the third.

CRIMSON PELARGONIUM FOR POOR SOIL (T. A. F.).—Wellington is the best. Gladioli of the Gandavensis section may be left in the ground all the winter, and they will come up strongly next season. It is much better to lift them in the autumn and prepare fresh ground.

LABOUR REQUIRED FOR GARDEN (T. J. R.).—You will require a gardener, under gardener, and a boy or woman in summer; but there is such a difference in the style of keep as to make a man less in three required between high and moderate keeping. The labour quoted is for moderate keep. A youth of

sixteen constantly will be needed, if you require great exactitude in keeping and high culture, in addition to the boy or woman in summer.

PRUNING STANDARD ROSES (A. S.).—Prune them at once, cutting back the strong shoots to three, the moderately strong to two, and the small shoots to one eye.

BROWNE PELARGONIUMS FOR EXHIBITION (Idem).—*Maréchal MacMahon*, *Nondescript*, *Mrs. Harrison Weir*, *Black Douglas*, *Chieftain*, and *Prince Arthur*.

SELECT GREENHOUSE AND HARDY RHODODENDRONS (Mark).—Greenhouse or conservatory var.—*Aureum splendens*, *Dennisoni*, *Edgeworthi*, *Henry-anum*, *Maddeni*, *Nuttalli*, *Javanicum fragrantissimum*, *Prince of Wales*, *Princess Helena*, *Princess Alexandra*, and *Veitchianum*. It may be that you mean by *Rhododendrons* for pots the early flowering var.; a few—*Altaclarensis*, *Blanche Superbe*, *Broughtonianum*, *Canaliculatum pictum*, *Ignescens*, *Mars*, *Nobileanum*, *Rosealium superbum*, *Perspicuum*, *Wallianum*, *Campanulatum elegans*, and *Marian*. Hardy var.—*Admirer*, *Arthur Helps*, *Austin Layard*, *Barclay-anum*, *Blandianum*, *Bylsianum*, *Cephalus*, *Glaude*, *Countess of Normanton*, *Decorum*, *Duchess of Sutherland*, *Kellogg*, *Everestianum*, *Frederick Waterer*, *Grace Darling*, *Helan Waterer*, *Henry Bohn*, *John Walter*, *John Waterer*, *Kate Waterer*, *Lady Eleanor Cathcart*, *Lefevreanum*, *Lord Eversley*, *Mesclatum superbum*, *Madame Carvalho*, *Michael Waterer*, *Mrs. John Waterer*, *Mrs. John Walter*, *Mrs. Thomas Bracey*, *Nervus*, *Ocellatum*, *Princess Mary of Cambridge*, *Quadronea*, *Raphael*, *Landfordianum*, *Sir James Clark*, *Sir William Armstrong*, *Tamariane*, *Stella*, *The Maroon*, *The Village Maid*, *The Warrior*, *Vandyke*, *Towardianum*, *Vicomte Foreville*, *William Austin*, and *William Cowper*.

SHAKALE AFTER FORCING (Idem).—Plant it out in good rich light soil in an open situation at once.

HARDY PERENNIALS (Idem).—*Anemone japonica villosa alba*, *Anthericum liliaceum*, *Aquilegia californica*, *Asphodelus luteus plenus*, *A. albus*, *Astragalus vaginatus*, *Campanula aggregata*, *O. celidifolia*, *O. lactiflora*, *C. macrantha*, *C. rapunculoides*, *Centaurea phrygia*, *Chelidanthus longifolius*, *Conwallia majalis plenus*, *C. rosea*, *Cyclamen hederifolium*, *Delphinium Beatonii*, *D. Belladonna*, *D. Keteleeri*, *D. Madame Ribollet*, *D. William Pfister*, *Dianthus cerasinus*, *D. floribundus*, *Dielytra spectabilis*, *Dodecatheon integrifolium*, *Epilobium latifolium*, *E. rosmarinifolium*, *Epimedium pinnatum elegans*, *Daphne striata*, *Geranium subcaeruleum*, *Gypsophila paniculata*, *Hemerocallis lutea*, *H. Kwanso variegata*, *Lithospermum petraeum*, *Lobelia fulgens*, *St. Clair*, *Lychnis viscaria flore-pleno*, *Morina persica*, *Myosotis dissitifolia*, *Nepeta Museini*, *Crothura marginata*, *Omphalodes verna*, *Orobanchis lathyroides*, *Oxytropis uralsensis*, *Pentstemon Torreyi*, *Phlox subulata oculata*, *Potentilla hybrida plena*, *Pyrethrum lanceolatum plena*, *Ranunculus amplexicaulis*, *Saponaria canescens plena*, *Saxifraga longifolia vera*, *Spiraea filipendula plena*, *S. japonica*, *S. palmata*, *Statice latifolia*, *Trilicium aurea*, *Trollius europaeus*, and *Veronica prostrata*.

DEODAR CEDAR SEEDS (G. C. S.).—The seeds you sent us are abortive, containing only a resinous fluid. It is no use sowing seeds such as those sent us; but any good seeds may be sown now up to June in a pan or box well drained in sandy loam, covering the seeds about three-quarters of an inch deep, and placing in a cold frame, the plants will soon appear. We have a fine batch of seedlings from seed had from Italy.

COPING FOR GARDEN WALL (B.).—We presume you wish a protective coping for the fruit trees, and not one for the wall, for which latter there is nothing better than stone with the joints cemented. For fruit trees a glass coping projecting about 2 feet 6 inches is best portable, so as to be only put up when the blossoms show colour, and removing in early June. The coping may be again used when the fruit commences ripening, and may be continued after the fruit is ripe if the autumn be wet and cold, to assist the ripening of the wood; but when the leaves commence falling the coping should be laid aside until spring.

TREES FOR AVENUE (Idem).—At your elevation we do not think Plane trees proper suitable for an avenue; but *Sycamore*, which is also commonly termed *Plane* tree, would succeed admirably, being one of the best trees for an exposed situation. In your situation, however, we should have *Lime* (*Tilia europaea sanguinea*), red-twigged variety, very tree-growing, forming a handsome head. Elm would answer, and the best is the *English*, *Ulmus campestris*.

GRAFTING HOLLIES (J. T.).—Now is a proper time to graft Hollies, or just before or when they are commencing growth, the seasons being in an inactive state, and the best mode is side or whip-grafting. Budding may be performed in July.

SENSITIVE PLANT TREATMENT (Idem).—Sow the seeds at once in a pot in a compost of turfy loam, leaf soil, and sandy peat in equal parts, covering them about a quarter of an inch deep with fine soil, and keep moist, placing in a hotbed having a temperature of 65° at night, and 70° to 75° by day, a cucumber frame answering well. When the plants have a pair of rough leaves pot-off singly in 3-inch pots, returning to the hotbed, shading for a few days until established, and then admit to light and air. They are to be shifted into 6-inch pots when the 3-inch are filled with roots, and from the 6-inch they may be transferred to 9-inch if large plants are wanted. The plants require to be grown-on in heat, being tender annuals, but will succeed in a greenhouse after the middle of June.

PLANTING BEDDING VIOLAS (Subscriber, New Ross).—Plant the plants from cuttings struck in autumn at the end of the present or early in next month, stopping them if not already done, so as to form bushy plants.

FOLIAGE OF GERANIUMS BROWNED (F. P. Harborne).—The leaves are browned from exposure whilst wet to the full sun, the soil being in a wet state, the roots in an inactive state. They may, however, be injured from dipping or syringing with some solution; but in the absence of data we cannot suggest, as we could wish, a cause, or point a remedy for the disaster.

POTATOS (G. Dice).—We cannot name them from tubers only. They are difficult to identify even when they are seen with the growing plants, the varieties are so numerous and so nearly alike.

LEMON-SCENTED VERBENA CULTURE (E. J. T.).—This (*Aloysia citrodora*) is a greenhouse or half-hardy plant, deciduous, requiring to be kept dry in winter, but with sufficient moisture to keep the wood from shrivelling. The plants to be cut-in in March or early April, each shoot to two or three eyes of the old wood, keeping rather dry until the young shoots are 2 or 3 inches long, then repot, removing most of the old soil, repotting in the same size of pot, shading from bright sun, and sprinkling overhead twice daily, watering moderately until the potting is recovered, then more copiously, admitting to

air and light freely, shifting into a larger size of pot when the one it were first potted into is filled with roots. A compost of fibrous light loam two parts, half a part each leaf soil or old cow dung, and sandy peat, with a sixth of silver sand will grow it well. So far from requiring a stove temperature it requires nothing more than safety from frost, succeeding admirably planted out in summer. Its foliage mildews from being kept too close and moist.

BREWSING CRICKET GROUND (Idem).—We should grow grass seeds again as soon as possible after the middle of the present month, raking the ground with an iron rake before sowing, and after sowing roll well, and leave for a month or six weeks, when mow lightly with a scythe, keeping well rolled afterwards, and frequently but not closely mown, the oftener rolled the better.

CUTTING-DOWN PAMPAS GRASS (F. M. S.).—We do not remove other than the flower stems, and cut away, when the plants commence growth, any unsightly growths of last year, the plants deriving a kind of shelter in winter and spring from the growths of last year, and plants not in dressed ground we have not touched for many years, they being much finer than the dressed plants. The plants cut down will not, we think, take any harm. It certainly will not prevent their flowering this year, and will not materially affect the growth only in exposing the plant to the cold of spring and early summer. It will start into growth in a few days.

PLANTING PAMPAS GRASS AND TRITOMA (Idem).—The present is a good time to plant these plants; but they certainly ought not to have been cut down—the dead parts only removed. Top-dress with short manure now, and water around the plants copiously in dry weather after the middle of May up to September inclusive, with weak liquid manure.

DEODORISING LIQUID MANURE (Idem).—Chloride of lime is a disinfectant and deodoriser, and may be employed at the rate of 1 oz. per gallon; but the best of all deodorisers is the soil, to which applied, its offensive effluvia will soon disinfect. The effluvia would be subdued by dilution with water, which it appears to us is what you require, and nothing more.

NAMES OF FRUITS (E. S. H.).—Both specimens are *Winter Greening*.

NAMES OF PLANTS (O. B. C.).—1, *Primula verticillata*. (T. W.).—1, *Cornus mas*; 2, *Hibbertia violabilis*. (Rob Roy).—3, *Davallia canariensis*; 4, *Poly-podium Billardieri*; 5, *Daphne Mezereum*; 6, *Adiantum* sp.; 7, *Polystichum angulare* var. (E. H. B.).—Specimen quite insufficient. (*J. Alexander*).—1, *Aster cespitosus*; 2, *Dalechampia rosea*; 3, *Begonia* (hybrid); 4, Specimen insufficient; 5, *Fajus grandiflorus*. (S. E. H.).—*Goldfussia anisophylla*.

POULTRY, BEE, AND PIGEON CHRONICLE.

PACKING EGGS.

We again have the egg season upon us in full swing, and once more we have a few words to say upon the subject, but it is more to the packing of the eggs that we would refer to on this occasion. Everyone nearly has their pet way of sending their eggs, and doubtless there is something to be said for each system whether boxes or baskets, chaff or hay, be in use. We would not pretend to dictate or to say that one way is especially superior to another, for we should be inundated with letters from indignant egg-packers, each exemplifying their assertion in praise of their own method by some wonderful successes, and we should believe them, for we have known eggs hatch, and hatch well, which have been packed in divers ways. Perhaps the most remarkable of all cases which have come under our own knowledge is when twelve eggs were brought from Malta in a *pie dish*, and eleven of them hatched. We actually saw the chickens and know it to be true.

In just touching on the various ways of packing in use we would only put our young hands on guard against faults they may be led to make. When boxes are used the labels must be nailed on before the eggs are placed in them, and the lid be screwed down, not nailed. Although we have known eggs hatched in boxes where nails have been used, still it is a great chance if the eggs do not get jarred by the hammering. Then the points of the nails used for fastening down the label should be clenched on the under side, or the points might run into the eggs; for only last week we had a package of eggs from a gentleman where the utmost care had been taken to screw down the box, but the label had been afterwards fastened down with inch nails and had penetrated the shells of several eggs. We cannot consequently recommend amateur packers to be too careful over this. Then every egg should, in our opinion, be securely wrapped in a piece of paper; it helps so much towards guarding the eggs from being jarred in transit. But even here we know of one of our greatest Dorking breeders who has marvellous success with the eggs he sells, and who simply places the eggs in chaff and ties down the box, using neither nails or screws; and we saw a letter the other day from a gentleman in Jersey, stating he had hatched nine chickens from twelve eggs so packed; but the secret here is the string—we are convinced of it. It makes something for the many hands a parcel of this kind has to go through to hold by, and this is the greatest point of all. We would urge on everyone, Never mind whether you pack in hay, or chaff, or sawdust, or moss, let the box or basket, whichever is used, have a handle, either made of string on the box or of wicker on the basket, but let there be a handle. No one but an eye-witness has any conception how a handleless package gets knocked about. One porter passes it to another, and perhaps he to the guard; or it has, may be, to go by a carrier, or a servant is sent to the station for it, and so the harm is

done. It is not the distance does the injury, but the knocks and tumbles the packages get. Now if they all had handles they would in most cases certainly be taken up by them, and the chance of the eggs hatching would be greatly increased.

As we said, we wished to disparage no pet ways of packing, but we would venture to warn our friends against the use of bran, oats, or sawdust—i.e., when they are used alone; for however full the packages may be filled with such mixtures, a long journey will shake the contents down much closer, and the eggs will very probably come in contact, when they will necessarily be cracked, and the contents running out from one or two so cracked eggs might ruin a whole sitting. We have, moreover, ourselves seen eggs in a package pierced by the sharp ends of oats; but this would not often be the case except in very thinly-shelled eggs, and such should not be sent out at all as a rule. One or two of our friends use moss, and we believe with immense success, but even then we should always recommend the box being lined with good and soft hay first.

In the use of baskets we have noticed so many which are made with a small round bottom, sloping up to a larger top; but these baskets are so liable to tilt over. We shall always have them made sugarloaf-shaped, when they are able to withstand a good shaking without fear of falling over. We have used ourselves with great success baskets of the shape of the wicker cases in which spirit jars are often encased. But of all egg baskets a long way ahead are, in our opinion, those used at Early Wood. They are oval, and are just such as country women go for the Saturday shopping with, having huge upright handles, which it is impossible not to take hold by, for they being tied together at the top form a most perfect handle.

All must allow it is but correct for a sitting of eggs to be properly and securely packed when sold and have to go any distance by rail or carriage, and that the purchaser naturally looks for it. We would, however, ask purchasers not to be too quick in writing sharply about the non-success of a sitting, for often the blame may be traced to their own doors; and, if not, one severe fall at a station or one heavy jarring would often ruin the whole success of a sitting. And we hear, too, repeatedly of failures among the eggs of our most honest and upright vendors, whose other eggs sent out have done well, when the cause could only be traced to some such accident as mentioned above. But that a handle easy to lay hold of is of great value to every egg-package we are quite sure, and would always recommend purchasers to insist upon.—W.

EARLY CHICKENS.—No. 1.

THE production of early chickens is one of the chief desiderata in keeping a flock of fowls. That this is not easy to accomplish the high prices which they command in early summer will vouch for. Success in this line demands the concurrence of several indispensable, and to induce this concurrence the average poultry-grower appears, inferring from the result, to be unfitted. There are some persons who seem instinctively fitted for this business, and, whether the season be favourable or not, always succeed in rearing a few early chickens. Every farmer, and in fact everyone that lives in the country or in a village, keeps more or less fowls, the object in view with the majority being a constant supply of eggs and poultry for home use rather than any expectations of profit from sending them to market. Indeed the opinion is widely prevalent that keeping fowls does not pay otherwise than in the convenience of having a basket of fresh eggs to draw upon for breakfast or a perchful of young chickens for dinner. To make sure of a constant supply more fowls are kept than are necessary; the surplus goes to market; and it is this surplus which to a great extent supplies our cities. Thus it may be explained why the person who believes that fowls do not pay still persists in sending them and their products to market. But whatever doubt there may be about the profit to be derived from eggs and late chickens, there can be none whatever about the profit from the early ones. The chief obstacles which render their production difficult are the scarcity of hens that will lay and want to sit in the winter, the inability of the hen to impart the requisite amount of heat to the eggs during severe weather, and the want of sufficient hardiness in the young chicks to endure cold winds and storms until they become feathered. The object of this essay is to indicate by what means these obstacles can be partially overcome.

SELECTION OF BREEDING STOCK.—We must bear in mind that hens do not lay while moulting, which process consumes two or three months. Hence if their annual moult be deferred till late in the fall, they will not recover from it in time to lay and hatch out a brood of chicks until the spring is far advanced. Consequently we should select for our breeding stock in the first place hens that have moulted early and become fully feathered by the 1st of December at latest; in the second place we should select pullets (and they will in most cases make up a great majority of the flock) that were hatched from the middle of April to the middle of June. They will commence laying from the 1st of November to Christmas, and become broody during the latter

half of winter. Earlier pullets will be earlier, want to set in the fall, and very probably moult about Christmas, thus becoming useless as early breeders. Later pullets will not become sufficiently matured to lay until spring. There is always a strong temptation to sell off all the early pullets, since they are worth so much more in the markets than the late ones; hence a lot of pullets of the right age can seldom be bought in the fall. To obtain such we must begin in the spring to rear them, or buy them when half-grown during the summer. We must also bear in mind that cocks lose their vigour while moulting. They usually moult late, hence they will not recover their vigour till late in the season; and if we depend upon them, a large part of the winter-laid eggs will be unfertile. Our choice then must be cockerels, and they should have been hatched in March or April, so that they may attain full size and become matured when winter arrives.

CARE OF EGGS.—The sooner they are gathered after the hens leave the nest the better. Half an hour of exposure when the day is cold and the wind high will destroy their vitality. They should be kept where the temperature is not allowed to go below 50° Fahr., nor above 80°; or better still, where it varies only between 60° and 70°. Avoid keeping them where they will be exposed to cold draughts of air. If they are to be kept more than a week before sitting it would undoubtedly be advantageous at any season to wrap them in paper and place them small and down. The paper prevents evaporation of their moisture, thus preserving them more nearly in the condition of fresh-laid eggs.

SITTING THE HENS.—A hen will keep her eggs warm through ordinary winter weather if her nest is well protected from the wind and the bottom of it be packed solid with fine sawdust (or any material that will not conduct heat), and lined with fine soft hay, well packed and bedded down. A moderately freezing temperature does not abstract heat very fast if the surrounding air can be kept at rest; but we seldom get three weeks in the winter or in March without a night or two when the thermometer sinks to the zero neighbourhood, or without a sharp north-wester or a chilly penetrating north-easter, and these are the times when the embryo chicks are destroyed; hence our hopes of success must rest in providing a situation for the sitting hens where we can prevent the temperature from falling far below the freezing point, and from which cold winds are entirely excluded. An ordinary cellar would fulfil the conditions, but the hens are quite likely to become unhealthy on account of dampness and want of pure air and sunlight. The one thing to be done is to build a house adapted for the purpose. Select a situation where there is a slight inclination to the south, dig 2 feet deep, and construct a wall on all sides but the south; remove the earth from the south side if the slope is not sufficient to leave it clear down to level of floor; 4 feet will be high enough for the posts of the building that stand in the wall, and 6 feet for those on the south side. The room should be plastered, and low windows reaching to within a foot from the floor should occupy the whole south side except the doorway. Around the base of this room the nests should be ranged; the floor of the room will serve for the bottom, and the sides for the back. Set up the cross partitions, and nail the top to them; a strip 5 inches wide nailed to the partitions in front and close to the floor will hold them in place and make the front of the nest. A door of narrow slats or wire netting should close the space above this strip, and be hinged at the top. For large and heavy hens the nest should not be less than 20 inches square; if they are smaller the hen in turning around is cramped for room, and in consequence is more liable to break her eggs. The packing of the nest should come nearly to the level of the top of the 5-inch strip, so that the hen upon entering will not be compelled to step down in getting on the eggs. The nest should be packed flat in the centre, and rise only when it approaches the circumference to keep the eggs from spreading too far. If it is concave throughout the eggs press against one another, and the hen has a great deal of difficulty in hooking them over with her bill; she will probably leave those in the centre undisturbed, and besides she will often pull one or more on top of the rest, when some will almost surely get broken. When a hen becomes broody remove her to one of these nests; she should, however, be allowed to remain two or three days on the nest in which she has been laying, for hens sometimes act whimsical. The removal should be made just before night. Put a hot brick in the nest half an hour before, and with it several china eggs; then, when the hen takes the place of the brick, she will find the nest and eggs warm, which will be a strong inducement to her to make herself at home in her new quarters. Close her in immediately, and leave her till the second morning to become wonted to her new nest. On the second morning after her removal take her off the nest and give her the freedom of the apartment with corn and clean water. She will probably go on the nest again in fifteen or twenty minutes, and then her sitting of eggs slightly warmed should be substituted for the china eggs. If she fails to return to her nest she must be caught and replaced; if she is then disposed to remain there give her her sitting of eggs. With a little watching she will make a good hen; but

beauty, the lilac-blue of *P. altaica* contrasting admirably with the white and primrose-coloured margins. *P. altaica* is represented to be a free-growing and profuse-flowering species, and is alike hardy and effective. The plants alluded to have had no protection afforded them, and although they have been exposed to sharp frosts and heavy rains they have braved the storm without receiving injury.

NOTES AND GLEANINGS.

"G. D." writes that a very pleasing ORNAMENT FOR THE DINING TABLE may be made by anyone having a few pots of *Panicum variegatum*. By gathering up the ends of the longest sprays and tying them to a stick fixed in the centre the framework of a small pyramid is formed. Pinching occasionally is all that is afterwards required to make most attractive objects. Those who have to supply plants daily for the table will find these pyramids useful, as they afford variety and are sure to give satisfaction.

THE Lords of the Committee of Council on Education have given directions for a COURSE OF INSTRUCTION IN BOTANY to be delivered at South Kensington, commencing about the middle of June 1876. This course will be given by Professor Threlson Dyer, M.A., B.Sc., &c. It will be a daily lecture, with practical instruction in the Laboratory, and will extend over about eight weeks. A limited number of Science Teachers, or of persons intending to become Science Teachers, will be admitted to the course free of expense. They will also receive their travelling expenses to and from London, together with a maintenance allowance of 80s. per week while attending the course. The hours of attendance will be from 10 A.M. to 4 or 5 P.M.

AT the Linnean Society on the 23rd ult. the adjourned debate on the observations made by Professor De Bary on the fungus producing the POTATO DISEASE was opened by Mr. Carruthers, who explained the reasons which had led the eminent professor of Strasbourg to doubt the correctness of Mr. W. G. Smith's observations on the resting-spores. Among the principal objections raised by De Bary are the different diameters of the spawn-threads or mycelium, bearing the antheridium (male) and the oospore (female) respectively. He further questions the connection between the spawn-threads and the resting-spores figured by Mr. Smith; and from these and other points, such as the septate threads of Mr. Smith's fungus, he considers that Mr. Smith is dealing with two distinct fungi, and that probably the resting-spores found by Mr. Smith are those of a *Pythium*, and not of a *Peronospora*. Mr. Berkeley considered that some of the points raised by De Bary in his comments on Mr. Smith's researches were "hyper-critical." He pointed out that Mr. Smith's figures showed the actual process of impregnation taking place between the antheridium on the smaller spawn-threads and the oogonium on the larger spawn-threads, and he concluded by expressing his own opinion that Mr. Smith was right in the main, and that the bodies figured by Mr. Smith are the "true resting-spores of the Potato fungus."

WE have received a copy of the BALANCE SHEET OF THE UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY, and are well pleased to see that it is prosperous. Its members meet monthly, and yet the management expenses last year were only £8 5s. 9d. The Secretary is Mr. J. F. McElroy, The Gardens, Moray Lodge, Campden Hill, Kensington.

MR. HENRY ORMSON, Stanley Bridge, King's Road, Chelsea, has been instructed to erect, from his own designs, an extensive range of iron and glass structures for the Royal Botanic Garden and Polytechnic Institution, Lisbon.

WE have never seen the great decorative value of SINGLE WALLFLOWERS so fully demonstrated as in the gardens of the Hon. A. Leslie Melville at Branston. In the greenhouse there—a small span-roofed structure—the display of flowers is sumptuous, and amongst them the Wallflowers are both charming by their perfume and effective by their rich spikes of flowers. These plants have been raised from seed which was sown early in the spring. The plants are dwarf, and have produced from fifteen to thirty-five spikes of flowers each, and have for some time past won the admiration of many visitors. For forcing in pots the single are much preferable to the double varieties, and in order to have the flowers early and the plants fine, seed should be sown at the present time.

WE recommend to those who wish to acquire a knowledge of our native entomology "SKETCHES OF BRITISH INSECTA, a Handbook for Beginners in the Study of Entomology." The author is the Rev. W. Houghton. It is illustrated with coloured plates and wood engravings, and is both instructive and amusing.

AT the monthly meeting of the BATH AND WEST OF ENGLAND held on the 28th of March, Mr. Gray, as Chairman of the deputation appointed to visit Bath with reference to the centenary meeting in 1877, reported in favour of Mr. Butler's farm, near the Bear Inn, Holloway, as the site for the Society's Show Yard, but left the selection of fields for the trial of implements an open question; and the report having been accepted and approved by the Council, the Field Stewards undertook by the next meeting (April 25th), to furnish a supplemental report on several matters of detail. The arrangement for the Society's visit to Bath may therefore be taken as finally settled, Holloway Farm being the site for the Show Yard.

ONIONS AND THEIR CULTURE.

ONIONS, it is recorded, have been cultivated by the Egyptians for upwards of three thousand years, and that they are still highly esteemed by the inhabitants of that "ancient nation." It is uncertain at what period the Onion was introduced into Britain, for it is generally admitted that it is not indigenous to our island, but found its way to our shores at some remote period from central Europe. The Strasburgh is probably the oldest variety of Onion as it is, perhaps, the hardiest, and in other good qualities it has still few superiors. Thus, although the Onion has for ages been cultivated over a vast extent of the earth's surface, and has constituted a staple article of food of nations ancient and modern, barbarous and civilised, yet no striking advance has been made in the character of the bulb, and "Onions is Onions" has become a proverb.

That being so it might seem a matter of surprise that any perplexity might be experienced either in the selection of sorts or on points of culture, yet such perplexities exist, and many a young gardener and amateur cultivator scans with anxiety long lists of names which are presented to him, and compares as well as he can the various testimonials of merit which are generally included in the list and are attached to the greater number of the names, hoping that he may arrive at a correct conclusion and produce something superior to what has been produced before. He glances at "Delftford," and "Spanish," and "Strasburgh," and "Banbury," and "Globe," but these are old names and sorts, and he is looking for improvements, and "Trebons" and "Roccas," and other fine titles have a better sound. But let him be careful, or he may find that Onions are not Onions in the sense that he has anticipated, and may produce a harvest of thick-necked specimens that refuse to lie dormant after Christmas, and that his stock is so "advanced" as to have run away, leaving him no sound bulbs for the kitchen.

Let it be recorded by one who has been bitten by the novelties in spite of the excellent teaching that he had received, that there is danger in ignoring the old kinds. It is from them that the grower must still choose if he would not fail in the supply of this important garden crop. That these kinds are offered under many names is quite true, and not less true is it that they are good. Nuneham Park, Improved Reading, Somebody's "Mammoth," and anybody else's "Prize" are all good so long as they preserve the characteristics of the old sorts, and especially in their keeping properties; but if size is gained at the expense of soundness it is gaining a loss. To have splendid Onions in September for exhibition is but a poor success, unless they are sound in March onwards.

There are probably few gardeners but who can remember some favourite saying of their former tutors. It may have been uttered in the broadest vernacular, and have at the time provoked a smile, yet further time may have proved its truth, and now in mature years we admit its usefulness. A favourite boast of one of my tutors, a hard-headed and kind-hearted Yorkshireman, was—"Have grown Onions for fifty year, an hav niver mist a crop, an ha niver grew nout but t' Broon Gloab, an ha niver sal." Another chief, whom I need not mention, relied on the White Spanish. I once presumptively ignored both their teachings, and "went in" for something "distinct;" but "never more." I that year bought Onions out of my own pocket to supply a nobleman's house and save my own credit, but again—"never more," for I have since and

for many years divided my ground between the two old varieties named, and I have always had Onions when anyone else had them, and by adhering to them as my staple sorts for spring sowing I am sanguine that I shall not fail in my supply.

Now Brown Globe is James's Keeping, and White Spanish is represented in the names given above. The finest type of the former that has come under my notice is Magnum Bonum, and Bedfordshire Champion is but another name for Brown Globe. The White Globe is a good Onion, and so is the Deptford or old Strasburgh; they may, indeed, be as good, but they are not better than the sorts named. A good Onion different from any of the above varieties I have also found reliable—good in size, appearance, and keeping properties—I mean Danver's Yellow. This when obtained true is an excellent sort, and partakes somewhat of the nature of the White Spanish and the Brown Globe. Quite sufficient names are now mentioned to include the most useful sorts, unless a red Onion is required, and the best in this section is the Red Wethersfield.

As to the quality of Onions, I believe it to be mainly governed by culture—I mean as to mildness or pungency. Dark-skinned are generally more pungent than light-skinned Onions, and small are more pungent than large bulbs. The longer Onions are kept in a growing state, provided they are growing freely, the larger are the bulbs and the milder their flavour. This is instanced by the Spanish Onions, which I am informed are sown under glass in December and transplanted in April to insure a long season of growth. I know that this is important if large-sized bulbs are specially desired; and the finest that I have grown (for exhibition) were obtained by sowing a few seeds on square turves, thinning the seedlings out to the best plant in each square, and planting the turves at the end of April. Previously they had been placed on a gentle hotbed under glass, and were attended to as to watering, ventilating, and hardening the same as other tender plants. These Onions attained to a large size, and were never attacked by the grub. That, however, is a "fancy" mode of culture only applicable to "fancy" purposes.

Another mode of culture which I have occasionally adopted may, perhaps, also be called a fancy mode; it has, however, proved really useful, and especially where carried out in a garden very prone to grub ravages. In this garden I found it almost impossible to insure a crop of Onions by the ordinary mode of sowing the seed in drills and thinning the plants, and the bulbs that escaped the grubs were usually small. I therefore sowed the seed on a slight hotbed of leaves in February, protecting the plants first with glass and subsequently with mats, and had stout plants for transplanting at the end of April. I thought that as my winter Onions were seldom affected with the grub I would adopt the same mode of transplanting strong plants from seed sown in spring. The plan proved quite successful, and produced a full crop of fine bulbs when previously miserable crops had been the rule. The plan is neither tedious nor expensive, and the value of the crop produced by it is well worth the trouble.

But, of course, when the soil is naturally favourable for the growth of Onions, and where the maggot is not troublesome, it is only necessary to sow the seed in drills a foot apart, and thin-out the plants in the usual way, or perhaps not quite in the usual way, for I fear it is much too common to allow the plants to remain too long before they are thinned, than which no practice is more prejudicial to the crop. If the young plants are suffered to grow so large before being thinned that the plants which remain fall down for the want of support the crop is practically ruined, and no special care can atone for past neglect; besides, the practice is really wasteful, for in drawing-out tens of thousands of large healthy young Onions we draw out probably half the nutriment that would suffice to perfect the crop were it left to support a proper and reasonable number of plants timely thinned. Onions should always be thinned before the plants touch each other, and when the plants that are left do not miss either the shelter or the proping-up of their neighbours. Thinning is a very simple matter, and as such it is apt to be overlooked, but it is not the less important; indeed, so important is it that many crops are ruined by the want of timely attention to this necessary work.

Onions delight in a deep, rich, and firm soil, and those who have a soil of this nature are seldom troubled with the maggot. I mean by firm a naturally heavy soil. The importance of having firm soil for this crop is generally admitted, and the work of treading the soil previously to sowing the seed has become a habit. Light soils cannot be too firmly trodden, but

some soils are so heavy, close, and firm that the treading of them is ridiculous, even for Onions. In very heavy soils a little special care is often requisite in sowing the seed, for if a quick free growth of the plants can be obtained in their early stages their aftergrowth is easy. In ungenial soils it is true economy to draw the drills 4 inches deep instead of 1 inch, and sow 3 inches of lighter soil in the drills before sprinkling in the seed, and then cover it with similar light soil. Wood ashes, decayed leaves and vegetable matter, old tan, and general garden refuse are invaluable for starting small seeds in heavy soils. It is only those who have proved the value of that practice who can fully appreciate its usefulness in producing a crop of Onions, and it is equally applicable to other seeds. In light soils that practice is not necessary, and it is on light soils in dry districts that the real difficulty of Onion-growing is experienced. The plants grow freely enough for a month or so, and then comes the grub; and when once the crop is virulently attacked, he is an able man who conquers the maggot and preserves the crop, and is far more deserving of a medal for his efforts than he who obtains one for a row of fine-foliated plants at a fashionable exhibition.

In cultivating the Onion in a garden where the maggot is unusually destructive, I can only find safety in preventive measures. First of all it is requisite to induce a quick unchecked growth of the young plants, and the common obstacle to this is the heat and drought of June. I find for counteracting the heat and drought common salt to be of great value, and do not hesitate to dig it into the ground at the rate of three bushels to a rod in the autumn, and I find its cooling properties and moisture-attracting nature highly suitable to this crop in a light soil. In the spring, a day or two previously to sowing the seed, I dig the ground again, and afterwards make it firm. As soon as the young Onions appear the hoe is set to work amongst them, and they are weekly sprinkled with soot, and occasionally, and slightly, with nitrate of soda and guano. This stimulates the plants, and perhaps causes a smell distasteful to the Onion fly; at any rate, the practice generally secures a crop. Before adopting it I could not succeed, and when the young Onions have been stricken by the maggot I have not been able to destroy it without also very nearly destroying the plants.

I do not find early sowing advantageous, unless by an unusually favourable season the plants receive no checks by late frosts. I have sown Onions every week from the 1st of March to the 1st of April, and find, taking the seasons at an average, that the last-named date is the safest for my dry light soil and grub-infested garden; but no plan is equal for evading the maggot to the one above alluded to of raising plants under protection, and having them strong for transplanting in the first favourable weather of spring. I find that it is useful to sow a few rows of the Silver-skinned or Queen Onions for the production of a few early bulbs, relying on White Spanish and James's Keeping for the general supply.

A word may be added on the storing of Onions. The bulbs are often left in the ground too long. They should be pulled-up immediately after their summer roots have withered, for the first shower falling after this time will cause the bulbs to emit fresh roots at once, and when this is the case the keeping properties of the Onions are greatly impaired. When taken up at the proper time and dried quickly they cannot be kept in too cold a place. Provided the bulbs are dry they will defy injury from any frosts which occur in Britain. My proof for this assertion is that I have known them to endure frost when the thermometer was 7° below zero, and no damage was done to the bulbs.

The great value and importance of this crop, and I think I may say its neglect by writers, who generally "fly at higher game," have induced me to jot down these my experiences.—
R. FISH'S PUPIL.

GLADIOLUS DISEASE.

AMONGST the theories that have been advanced on this subject is that it is the result of exhaustion of the bulbs in our unsuitable English climate. It is a theory I have always combated as unsound, and I think the example I now send fully bears me out in my opposition to it. The corm which accompanies this has been forwarded to me by my friend Mr. Banks of Sholden Lodge near Deal, our largest and best amateur grower. It is one which he received from France this autumn of Miriam, a new variety that has been planted in English soil, but which is as badly diseased as any English-

grown one that could be found. He sent me two bulbs: the other I shall submit to the Scientific Committee of the Royal Horticultural Society next week.—D., *Deal*.

[The corm was more than half decayed, and covered with parasitic fungus.—Eds.]

SERIOGRAPHIS GHIESBREGHTIANA.

Most useful is this plant for affording a supply of sprays for vase and other modes of indoor decoration during the dull months of autumn and winter. Equally useful also are the plants for conservatory and dinner-table decoration during the same period of the year. It is seldom that this plant is found cultivated in large numbers after the manner of *Poinsettias*, but it is well worthy of being so grown for its glossy leaves, and the lightness and brightness of its feathery spikes render it an admirable associate of plants of rigid habit and stately form. The soft scarlet of its flowers is a colour which is pleasing, and well-grown plants are worthy objects of admiration.

The cultivation of this plant calls for no special skill, it being as easy to grow as a *Pelargonium* and as certain to flower when its season arrives in October, when it continues in beauty for three or four months. Cuttings inserted at the present time, and the plants grown on the shelf of a stove until May, potting and stopping them as required, and placing them in frames in June to make their summer growth, will be attractive plants in the autumn, when they should be arranged in a warm conservatory.

After the flowering season is over water should be withheld to facilitate the ripening of the shoots, when the plants may be cut down, the soil be shaken from the roots, and be treated precisely as are show *Pelargoniums*, with a little warmer temperature and moister atmosphere. Plants are thus produced 3 feet high and through, huge globes of scarlet sprays.

A suitable compost for the plants is a mixture of loam, peat, and leaf mould in their early stages of growth, finally potting them in richer soil by substituting decayed manure for the peat. I fear that this useful plant is not cultivated so extensively as its merits deserve, and hence I ask the insertion of these notes.—A CONSERVATORY FOREMAN.

THE TREE PÆONY.

How is it that the now numerous and beautiful varieties of *Pæonia Montan* are so seldom seen in our gardens? I saw some last summer in the old gardens at Hampton Court blooming very freely in the sheltered borders; and on visiting Belvoir was delighted to find a noble specimen growing and blooming profusely at the end of the range of vineries. Apart from its use as a half-hardy perennial, however, it deserves

especial attention for pot culture, and for the spring or early summer decoration of the warm greenhouse or conservatory.

This plant is said to grow wild in northern China, and is largely cultivated by the Chinese florists, who have raised numerous very distinct seedling varieties. Other very handsome seedlings have been raised in this country, and also on the Continent, especially at Ghent, so that a good collection may now be formed of nearly all shades of pink, flesh, purple, straw colour, yellow, crimson, and white, and some of these are very delicately perfumed.

It is difficult to imagine more attractive pot plants than these, and their culture is as simple as that of an *Azalea* or other Chinese shrubs.

They are generally propagated by grafting a shoot, inlaying or cleft-grafting on a thick piece of the root of the common herbaceous *Pæony* (*P. officinalis*); but cuttings root freely in the spring if placed in a close propagating case. New forms are readily raised from seeds, but artificial fertilisation is generally necessary to secure good results. The quickest, and for many the most satisfactory plan, is to order a dozen or two of the best varieties from any respectable nurseryman who grows these plants for sale; and whoever once gives them a fair trial for conservatory decoration in the spring will never care to be without them. The flowers look best on the plants; but for large drawing-room vases they are very attractive.—(B., in *The Gardener*.)



Fig. 79.—SERIOGRAPHIS GHIESBREGHTIANA.

CARNATIONS AND PICOTEES.

In addition to those which "D." of *Deal* recommends are the following, than which there are no better:—In Carnations Sir J. Paxton (Ely), s.b.; Lord Baglan (Bowers), c.b.; Lord Milton (Ely), c.b.; Falconbridge (May), p. and p.b.; Squire Meynell (Brabbins), p.f.; Juno (Baldon), p.f.; Premier (Millwood), p.f.; Clipper (Fletcher), s.f.; John Keet (Whitehead), s.f.; Maid of Athens (Ely), s.f. In Picotees John Smith (Bowers), h. red; Princess of Wales, m. red; Mrs. Summers (Simonite), heavy purple; Ann Lord (Lord), light purple; Mrs. Lord (Lord), heavy rose. The above are all equal to any sorts which "D." of *Deal* mentions, and many are superior. They possess good constitutions.—GEORGE RUDD, *Bradford*.

EARLY WRITERS ON ENGLISH GARDENING.

No. II.

REV. JOHN LAURENCE.

To the close of the seventeenth century from the earliest period of Christianity its clergy were the chief promoters of the arts and sciences, and the authors and preservers of their literature. Gardening is not an exception to that rule. Gardeners in those times were totally illiterate, and to the clergy then living we are indebted for the only publications that im-

parted instruction in horticulture to their contemporaries, and that have preserved to us a record of their practice of the art. Of these clerical horticulturists the first of superior attainments known to us is the Rev. JOHN LAURENCE, and anyone even now taking his "Clergyman's Recreation" and "Gentleman's Recreation" for his guides would not be led into faulty practice. Those works tell the results of his experience during more than twenty years, and he observes, "Most of the time I can spare from the necessary care and business of a large parish, and from my other studies, is spent in my garden and making observations towards the farther improvement thereof, for I thank God this sort of diversion has tended very much

to the ease and quiet of my own mind; and the retirement I find therein, by walking and meditation, has help'd to set forward many useful thoughts upon more divine subjects, as I may perhaps hereafter have occasion to inform the world. In the meantime I cannot but encourage and invite my reverend brethren to the love of a garden, having myself all along reap'd so much fruit from it both in a figurative and literal sense." He was born at St. Martin's, Stamford Baron, Northamptonshire, of which his father was the incumbent, in 1668. He was admitted B.A. of Clare Hall, Cambridge, in 1688, and was presented to the rectory of Yelvertoft in Northamptonshire in 1708, previous to which he had become M.A. To the cultivation of the garden of the rectory house he assiduously applied, and though its soil was shallow and on the worst description of subsoil—viz., a white clay, in three years he grew in it some of the choicest fruit. In 1721 he moved to the rectory of Bishop's Wearmouth in the county of Durham. In 1723 he was a prebendary of Salisbury. He says that he pursued gardening "by way of diversion, not at all interfering with, much less interrupting his proper studies," and an evidence of that is before me. His "Christian Morals" and "Christian Prudence," published in 1720, are volumes worthy of a clergyman, and to be read with pleasure and advantage.

His first publication relative to gardening was "The Clergyman's Recreation: showing the Pleasure and Profit of the Art of Gardening," which passed through six editions between the years 1714 and 1726. The completing portion of this work is entitled "The Gentleman's Recreation, or the Second Part of the Art of Gardening Improved." Of this three editions appeared between 1716 and 1723.

His "Fruit Garden Kalender: Teaching in Order of Time what is to be done therein every Month in the Year," was published in 1718, and I am not aware of any subsequent edition.

The three volumes had as their publisher Mr. Bernard Lintot; and when in 1726 Mr. Laurence published in a folio

volume "A New System of Agriculture: being a Complete Body of Husbandry and Gardening," Lintot asserted that in different words it contained what Mr. Laurence had previously sold to him in the form of "The Clergyman's and Gentleman's Recreation." This assertion is not true, for the "System of Agriculture" includes farming and every department of gardening, whereas the "Recreations" are restricted exclusively to fruit culture. The following are a few unconnected extracts from its pages:—

"I was the first and almost only writer in the last century who had revived the spirit of gardening."

"By the bounty of the Bishop of Durham I have been re-

moved (very agreeably) into his bishoprick, which may properly be called *The Garden of the North*."

"Superstition often governs where it should not; but the good wife will keep to her old mumpisms of an odd egg when she sets her hen, but let grafting be performed 'without any regard to weak and groundless superstition of the age of the moon.'" Some of the names spelt differently from our forms of spelling are Philbud, Golden Renating, Sallery. It is startling to find that the chapter entitled "Reptiles or the Lowest Vivacious Flowers" relates to the Auricle, Polyanthus, Hepatica, Violet, and such dwarf plants. "The Winter Bon Chrétien is remarkable for keeping longest, and all the sorts of them are as remarkable for answering so well the purport of their name, Bon Chrétien, or Good Christian, sound at Heart (the right sort, alas! hard to be met with), for as in time they begin to decay and rot in the outward parts or pulp, so it is observ'd that the core or heart continues generally sound to the last."

In 1728 appeared his last publication, a poem entitled "Paradise Regain'd, or the Art of Gardening." It is a pamphlet of only fifty-nine pages. There is no author's name on the title, and we have doubted whether he was the author, for in it he describes his cottage on the bank of the Thames near Clarendon—

"Hereon my glebe and mansion situate,
In compass small, afford no mean retreat.
Through some ill fate they long neglected lay,
In which condition all things felt decay;
The gates unhung'd, the palisades down,
Were all defenceless, like dismantled town.
The glebe was rude throughout, and cover'd o'er
With weeds, in sad confusion, nothing bore."

He then relates how he restored the garden to order, what flowers and trees he introduced, and also bees, concluding with these four worthy lines—

"Those that were innocent before too wise,
Were gard'ners made, and pleas'd in Paradise:
Oh! may I count what disobedience cost,
And innocence regain where once 'twas lost."

Mr. Laurence died at Bishops Wearmouth May 16th, 1782,



Fig. 80.—REV. JOHN LAURENCE.

and was buried in the chancel of its church. It was erroneously stated in the "Gentleman's Magazine" that a stone with an inscription was placed over the grave, and some years subsequently the stone was turned and another inscription cut on the other side. But a memorial has recently been placed in the chancel by one of his descendants, Richard Laurence Pemberton, Esq. He is represented by the families of Pemberton, Goodchild, and Dale, which last-named family has recently become extinct. Mr. Pemberton possesses the original portrait of Mr. Laurence and his wife Mary, who died in 1746; also several articles of plate which belonged to him, including a handsome tankard with his arms, and crest, and initials. The name is sometimes spelt Lawrence, but we retain the u, as it appears in his "New System of Agriculture," and as still do the family's representatives.

DO RABBITS EAT LILIUMS?

In the spaces in groups of shrubs we have varieties of the following species of Liliium—viz., croceum (aurantiacum), davuricum (umbellatum), candidum, longiflorum, martagon, superbum, and pyrenaleum, with auratum, speciosum (lanceifolium), Humboldtii, and tigrinum, in positions to which rabbits and hares have free access, and I do not remember any injury having been done to the Liliiums by those animals. Liliiums do remarkably well in Rhododendron beds, and neither plants suffer damage from hares or rabbits. I may mention that both rabbits and hares abound here, the timid hare being bold enough to take every bit of grass and stem down to the soil of over a hundred Carnations of the tree kinds, many over a yard high, in a position opposite a potting shed—the domicile of two cats, and not a dozen yards from the shed. Bold indeed are hares and rabbits in seeking to satisfy their cravings for dainty morsels. The daintiest fare to set before hares is a free-growing succulent Carnation, and in shrubs they seem to prefer Skimmia japonica to all others.

I have been often surprised at the remarkable scrutiny of hares, and especially rabbits, exercised upon any plant introduced to their sporting and feeding ground. These animals never fail to test the foliage of any introduced shrub or the bark of a tree, whether it be had from a distance or merely transplanted from one part of the grounds to another. Last spring we moved a quantity of common Laurel, which had not been interfered with for years, to from 2 to 400 yards only distant from their old positions, and during the past winter the Laurels have been denuded of foliage and the stems and shoots as bare of bark as a flagstaff, which the animals did not touch in their former quarters. Great novelty-admirers are hares and rabbits, admitting nothing of any kind in the herb way to pass without a testing of its quality. If the subject introduced be relished speedy execution ensues, but if distasteful the nibbling will be less and less, and ultimately abandoned. Hares and rabbits—what a liking they have of barks! Not Cinchona of course, but of Rhus cotinus, "aromatic and astringent," says Dr. Hogg in his "Vegetable Kingdom," page 241, "enumerated as one of the substitutes for Peruvian bark." Quite as partial are they to the bark of Rhus typhina, one of the highest astringency, followed by Ash (Fraxinus excelsior), its "astringency and bitterness" causing it to have "been used as a substitute for Peruvian bark."

Of the young shoots or small branches of Ash hares and rabbits have an uncommon liking in hard weather. To strew the branches of that tree near to recently-planted plantations in severe weather may be a means of attracting the animals to them, and mitigate the severity of their attacks on the fresh-planted trees, accompanied by a little hay and some Mangolds, with Turnips, the freedom of the plants from attack will show the "penny-wise-and-pound-foolish" policy of the non-feeding as compared with the feeding practice. Our experience is that these animals will eat of most trees and shrubs, but they do not eat Liliiums.—L. AND L.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

SACCOLABIA HENDERSONIANUM. *Nat. ord., Orchidaceae.* *Linn., Gynandria Monandria.* Flowers pink.—"It was imported from Borneo, and flowered in 1874; but Dr. Reichenbach states that it has been in Europe ever since the year 1862."—(*Bot. Mag.*, t. 8222.)

SEDUM PULCHELLUM. *Nat. ord., Crassulaceae.* *Linn., Decandria Pentagynia.* Flowers purplish pink.—"It is a native of the mountains of the United States, from Virginia to

Georgia, growing in rocky places. Sent by the Rev. Mr. Ellacombe from his rich and admirably named collection at Bitton Vicarage between Bristol and Bath, one of the most favoured climates and soils in Britain for a general collection of the herbaceous plants of temperate climates, and of which advantages its accomplished occupant makes the best use. It flowers both at Bitton and Kew in July, and must not be confounded with two plants commonly known in gardens as *S. pulchellum*—namely, *S. sexangulare* and *S. Lydium*."—(*Ibid.*, t. 6223.)

HYPOESTES ARISTATA. *Nat. ord., Acanthaceae.* *Linn., Dianthia Monogynia.*—"The genus *Hypoestes* consists of some forty South African, Indian, and Australian plants, many of them weedy in habit and far from attractive in flower, to which, however, the present forms a conspicuous exception, being remarkable for its bright purple flowers, which are produced in profusion, and are prettily striped and spotted on the upper lip. It is a native of extra-tropical South Africa from Algoa Bay to Natal, and is common in shrubberies, where Forbes collected plants for the Horticultural Society in the year 1822. It would no doubt form an attractive warm greenhouse plant if properly treated as to wintering, for, like all Cape plants, it must have a season of almost absolute rest. It flowered at Messrs. Veitch's establishment in February, 1874."—(*Ibid.*, t. 6224.)

AINALISIA WALKERI. *Nat. ord., Compositae.* *Linn., Syngenesia Superflua.* Flowers white.—"A most graceful little plant, belonging to a very little known genus that inhabits the mountains of North-eastern India, China, and Japan, and of which only one species had been found in Hong-Kong until the discovery of this species by Capt. A. L. Walker when Brigade-Major in the island. Both species are instances of the wonderful localisation of the plants of that little island, which has been so well discussed by Bentham in his *Flora of Hong-Kong*. *A. fragrans*, the kind already described, and which has broad radical leaves, has been found on Victoria Peak, where it is so rare as to have been gathered by only one collector. The exact locality of *A. Walkeri* is not known, but as it has escaped the notice of such keen collectors as Champion, Hinds, Hance, Wright, Seeman, Wilford, and others, it cannot but be very rare and local. Though only containing twenty-nine square miles, the diminutive island of Hong-Kong contains upwards of one thousand native species of flowering plants and Ferns, which is only one-third less than the British Islands possess. Many of the most striking of these are more rare even than the *Ainalisias*. Thus, speaking of the trees, Bentham states of one that only three trees of it are known in the island; of another that it was seen but once; and of a third that its existence is only known from a specimen picked out of a faggot of wood which a Chinaman was carrying home! Such facts as these, coupled with Capt. Walker's discovery of this *Ainalisia*, render it more than probable that not a few novelties still lurk in this little British possession. *Ainalisia Walkeri* was communicated by Mrs. Walker of Chase Cottage, Enfield, with whom it flowered for the first time in December last, the plant being then three years old."—(*Ibid.*, t. 6225.)

DENDROBIUM FUSCATUM. *Nat. ord., Orchidaceae.* *Linn., Gynandria Monandria.*—"D. fuscatum was first known from specimens collected by Dr. Hooker in the hot valleys of the Sikkim Himalaya and the Khasia Mountains in 1848-1850, where it is far from uncommon. A fine drawing of it (by a native artist) exists in the Othcart collection of Himalayan plants at Kew, and represents many racemes from one stem, one of which has fifteen flowers, all of a deep orange, almost orange-brown. It flowered in the garden of F. Currey, Esq., F.R.S., Sec. L.S., in April, 1864, and was imported, we believe, from the Khasia Mountains."—(*Ibid.*, t. 6226.)

ALLIUM ANCEPS. *Nat. ord., Liliaceae.* *Linn., Hexandria Monogynia.*—"Remarkable for its dwarf habit, broad, flat, acutely-angular stems, and very dense umbels of bright purple flowers with acute segments. It inhabits the Sierra Nevada portion of the Rocky Mountains, both upon the Californian and Nevada sides, at an elevation above sea level of from 4 to 5000 feet, and of course, like all the other known species of the genus—now, according to Dr. Regel's estimate, above 250 in number—is quite hardy in England in the open air. With Messrs. Veitch it flowered in May, 1875."—(*Ibid.*, t. 6227.)

PLUM.—*Rivers's Blue Prolific.*—"Our specimens of this amazingly prolific Plum were sent to us by the Rev. W. F. Reddyffe as *Rivers's* No. 4, and we have since ascertained from Messrs. Rivers & Son that this No. 4 is to bear the name above

adopted. The numerous branches sent by Mr. Radclyffe were all heavily laden with Plums; the branches, long and short, were all literally crowded, and this, we are informed, is the general character of the tree. The fruit is below medium size, about $1\frac{1}{2}$ inch long, and rather over an inch in diameter, oval, slightly narrowed to the stalk, and with a shallow suture. The skin is of a dark purple colour, covered with a thick blue bloom. The stalk, half an inch long or more, is set in a shallow cavity. The flesh is dull greenish-yellow, juicy, adhering to the stone, with a brisk and agreeable flavour. It is a good culinary Plum, ripening about the middle of August, and the tree is very hardy and a great bearer."—(*Flor. and Pom.* 3 s., ix., 89.)

OUR BORDER FLOWERS—WHITLOW GRASS.

A widely scattered race of plants, many of them well adapted to all purposes that flowers can be applied to. Some of them are especially suitable for spring garden decoration. *Draba verna* as seen on a sunny morning in spring, to me at least, is a charming sight. *Draba muralis* is of much larger stature, and is met with often on ballast hills and railway embankments, but is worthy of a place in our borders. *Draba incana* is a desirable plant for the manner its seed pods are twisted, and is only to be met with in elevated localities; but these must give place to others of the family that are in possession of more attractive properties.

As a spring-blooming plant *Draba aizoides* may have many rivals, but it will hold its own against all comers. I think it is one of the best of the race, being of dwarf habit, grows freely, bears a good deal of rough usage, is of a pretty yellow colour, continues in bloom for a length of time; it seeds freely, and all the better for being often transplanted, and is useful alike for indoor decoration, bed, border or rockery. *Draba rupestris* is a native of Scotland, of dwarf habit, with yellow flowers; it blooms late in the spring, and is a useful plant for the rockery. *Draba beatlica* or aizoon ought to be met with more frequently than it is. Then we have *D. ciliaris* from Switzerland—and what a sight to see this gem in its native home!—and others from the same region. *D. alpina*, if not so showy as some others, is desirable as a rock or alpine plant. There are many others that might be enumerated of this desirable family.

All the species are of easy cultivation. The herbaceous kinds are increased by seed and division. The seed may be sown in the spring in sandy soil placed in a cold pit or frame. When the plants are large enough they must be carefully pricked out and attended to as they require. Division may take place either in spring or when the plants have done blooming. They are not very particular as to soil; sandy loam and peat, with a little leaf mould, with good drainage, and water when they require it, with a sunny aspect, will afford them a favourable medium to develop themselves in. It is to be regretted that these plants are so seldom met with.—*VERITAS.*

EFFECT OF TREES IN AUTUMN.

In answer to "A LOVER OF THE BEAUTIFUL," we recommend the perusal of a very excellent volume entitled "The Natural Principles of Landscape Gardening; or, Adornment of Land for Perpetual Beauty." The author is Mr. Joseph Forsyth Johnson, Curator of the Royal Botanic Gardens, Belfast. The following extracts are applicable to our correspondent's questions:—

TABLE OF SPECIAL EFFECTS OF TREES AND SHRUBS.*

WINTER DIVISION.		
Oct., Nov., and Dec.	Dec., Jan., and Feb.	Feb., March, and April.
<i>Fyrus</i> , scarlet berries	Evergreens are now the principal effects, and possess many distinctive beauties.	<i>Amygdalus coccinifera</i> Persica, of sorts [April]
<i>Betula</i> , of sorts*		<i>Sambucus</i> , golden foliage in
<i>Betula</i> , various*		<i>Acer</i> , do.
<i>Oedrus Libani</i>	<i>Laurostinus</i>	<i>Populus</i> , do.
<i>Arbutus</i> , of sorts (P)	<i>Jasminum nudiflorum</i>	<i>Abelia floribunda</i>
<i>Garrya</i> , of sorts (P)	<i>Andromeda</i> , of sorts (P)	<i>Berberis</i> , of sorts (P)
<i>Azalea Ghent</i> var. [scarlet leaves]	<i>Cercoborus japonica</i> *	<i>Cydonia japonica</i>
<i>Althaea frutex</i>		<i>Forrythia</i>
<i>Coronilla Emerus</i>		<i>Furze</i>
<i>Monthly Roses</i>		<i>Daphne</i> , of sorts
		<i>Mahonia</i> , of sorts (P)
		<i>Ribes</i> , of sorts
		<i>Persica</i> , of sorts

* Names marked thus (*) continue their effects until May. (P) means permanent or evergreen.

"AUTUMN EFFECTS."

"The hues worn by the trees in autumn have already been alluded to. The Maples, Scarlet Oak (*Quercus coccinea*), and others, assume the very richest tints. As on a soft bright day we survey some woodland scene, bathed in golden sunshine, with leafage all aglow, it would almost seem as though some happy festival of Nature were in preparation to celebrate the happy fruitions of the year.

"Different varieties of what are termed Ghent Azaleas impart a very pleasing autumnal warmth by their leaves giving a bright scarlet; while among others the *Althaea frutex* displays its pretty blossoms even as late as October and November.

"The Rose, commonly termed Monthly Rose, in mild seasons and in sheltered situations will yield abundant flowers throughout October, November, December, and January. In most gardens a place suitable for these plants can be found. It will often prove advantageous to have some early *Chrysanthemums*, in spots not too conspicuous, however. Large groups of *Tritoma Uvaria* afford an excellent display, and, when in good condition, the foliage proves effective during a great portion of the year. The flowers themselves, indeed, are very handsome, and often a single plant will present as many as thirty spikes at one and the same time. Many places may be suitably occupied by these plants, which harmonise well with more permanent growths. The *Viburnum Tinus*, the *Andromeda floribunda*, and others, assist the autumn and winter effects.

"The coloured stems of some trees—the *Salices*, for example, and the *Betula alba*—often help to brighten our winter landscape. The scarlet Dogwood (*Cornus alba*), is excellent in park scenery. There are very good masses of this plant at Caledon Park, Armagh. The *Deutzia crenata flore-pleno* has a pale yellowish bark in winter, and much variety in this respect subsists amongst deciduous growths. The *Jasminum nudiflorum* are of great importance as regards the winter effects of climbers."

MANURES FOR POTATOES.

For most soils and in average seasons farmyard manure must be the base. The only exceptions are soils very rich in humus, and these, except in gardens, are few. Ten to fifteen tons of manure per acre ploughed-in in the autumn and supplemented in the spring at planting time with fertilisers is a sound principle to work upon. In wet strong lands the supplement may consist of fifty to one hundred bushels of lime per acre, with artificial fertilisers as a top-dressing. The land which grows the greatest crops of the best quality, and continues to do so under a series of many years' cultivation, is warp, and which contains a large natural admixture of gypsum, supplying lime and sulphuric acid, which, taking tuber and haulm together, form the largest proportion of the components of the Potato. On most soils farmyard manure in autumn, in quantity varying with the poverty or richness of the land, and a spring dressing of 2 cwt. of superphosphate, 1 cwt. of potash salts, and 1 cwt. of nitrate of soda per acre, will be found a profitable application.

But another manure seldom recommended is found, taking into consideration bulk of yield, and comparative freedom from disease, to be a valuable assistance to Potatoes with or without dung—namely, kiln-dust. This on medium and heavy loams has proved itself, taking one season with another, a most reliable application in sound Potato production judged in comparison with other dressings. No manure is found to produce such uniformly valuable crops year by year as ten to twelve tons of farmyard manure applied in the autumn, and one ton of kiln-dust spread-in with the sets at the time of planting. As an instance of its value, a cottager's allotment became vacant in a field of sixty occupants, which was planted with Potatoes, receiving as a dressing kiln-dust at the rate of 1½ ton per acre. In the field other plots were manured with guano, nitrate of soda, superphosphate, and farm or pig manure in liberal quantities; but incomparably the best plot in the field was the one under kiln-dust. The plants kept their foliage healthy the longest of any, and disease was scarcely to be seen. The next best plot received at the rate of 10 tons of pig manure per acre, and a further dressing of 2 cwt. of nitrate of soda.

It would be instructive if others could communicate their experience with kiln-dust as a manure for Potatoes, or could mention any other fertilisers which have added to the value of this important crop.—J. M., *Yorkshire.*

The first Exhibition at the Royal Aquarium, Westminster, which opens on the 12th inst., is being anticipated with a considerable amount of interest. The schedule is judiciously

drawn up, and includes not only plants and flowers in season, but also fruits and vegetables. The prizes are on a very liberal scale—more than usually so in some of the classes—no less than £56 being offered for Cyclamens, £24 for standard Azaleas, and £54 for Orchids. Rhododendrons are also well provided for, and in all the classes the prizes are tempting and substantial.

THE LOVE OF FLOWERS.

THE interest which flowers have excited in the minds of mankind from the earliest ages to the present day has never been confined to any particular class of society or quarter of the globe. They appear to have been scattered over the world as a medicine to the mind, to give cheerfulness to the earth, and furnish enjoyment to the inhabitants. The love of flowers commences in infancy, and increases with increasing years, and continues to old age.

The taste for flowers was never so universal and widely spread as it is at the present time; it prevails among all classes, from the humble possessor of a few pot plants in city or town to the owner of "broad acres" in the country. We are assured by innumerable proofs that flowers have endless charms. The earliest annals of our race attest the power by which these beautiful objects have added to our enjoyments or assuaged our sorrows. The toiling clerk and the hard-worked artisan participate in their pleasures, and bestow on their modest garden beds their leisure moments, deriving health and delight from these willing cares.

Our public parks and gardens have been adorned with the vegetation of the tropics, and from all parts of the globe these floral treasures have come. Those rich gifts from other climes, gathered together in our own gardens in summer, have fostered a wholesome love of flowers, and stimulated their culture in private gardens, and have added to the attractions of numerous homes; for such plants, as Keble has well said—

"Need no show of mountains hoary,
Winding shore or deepening glen,
Where the landscape in its glory
Teaches truth to wandering men.
Give true hearts but earth and sky
And some flowers to bloom and die;
Homely scenes and simple views
Lowly thoughts may best infuse."

—N. COLE, *Kenstington Gardens.*

HARDY VINEYARD AT CASTLE COCH, NEAR CARDIFF.

PERHAPS it will interest the readers of "The Gardener" to know that the Vines growing at Castle Coch in the open have ripened their first season's growth very well, although the summer was a cold and wet one. Most of the Vines had grown to the top of their stakes early in the autumn, and continued to grow and carry their foliage green and healthy till nipped by the first frost. At this time I had some doubts as to the wood being properly ripened, in consequence of the foliage keeping so long green. However, on pruning them on the 6th ult. my fears were dispelled on finding the canes properly ripened for more than a half of their entire length. I cut them down to within two buds of the ground.

The canes are not very thick, but they are solid, with scarcely any pith to be seen; the buds are prominent, and, to all appearance, will break strongly next year. *Malier Blanc* (white) is a stronger grower than *Garnais Noir* (black). I purpose striking some hundreds from cuttings—not from eyes, as I did last year—in the same way as we strike Gooseberry cuttings.

If any of your correspondents would like to try a few cuttings of these hardy French varieties I shall be happy to supply them.

The Vines on the Castle wall here have made excellent wood, and ripened it thoroughly.—A. PETTIGREW, *Cardiff Castle.*—(*The Gardener.*)

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

GARDENERS complain very much this season about their work being behind. So far the weather has been all against doing much work in the open ground; now we have a very pleasant change, the weather is warmer, and the ground is sufficiently dry for working. Our own work is well forward. The earliest

crops so far do not look over-promising, but with the pleasant change in the weather all vegetable crops will make good progress. The ground is still very cold, and any seeds that have been sown are taking a long time to vegetate. We never saw Peas lie so long in the ground before they showed above it as the second sowing. Under such circumstances even good seeds are likely to be injured, and the seedsman may be blamed when it is only the cold wet ground that is in fault.

We will sow seeds of *Seakale* this week. We have found that it is not safe to trust altogether to planting the old roots that have been forced, we find that those plants raised from seeds are better. It is necessary to sow early in the season, sowing the seeds in drills about 15 inches apart, and the seeds must be sown very thinly; if the plants are left 6 inches apart in the rows it will be sufficient. The old roots have all been planted. We allow them more room—about 18 inches between the rows, and 9 inches between the plants in the row. Pieces of root from 4 to 6 inches long are the best for planting; the top and of the root should just be covered with soil. We sometimes plant the roots amongst ashes; a little strewn over the crowns is beneficial if the ashes are not used to plant in.

We have tried again and again to grow *Broccoli*, but only to fail with it. We are not sowing any this year except the ordinary sprouting sort. From now to the end of the month is a good time to sow the seeds. We do not recommend a large selection of sorts, and those who have had much experience in this matter will not require advice. There is one thing, however, that must be taken into account, and that is, that though a variety may do well in a certain soil and situation, the same sort may not succeed quite so well under altered circumstances. To continue the supply for the longest possible period, early, mid-season, and late sorts must be sown. The Messrs. Veitch of Chelsea are sending out a very fine new sort this season, it is called *Veitch's Self-protecting Autumn Broccoli*; the beautiful white heads are quite hidden by the leaves. This with *Snow's Superb Winter White* and the *Walcheren* are the best three for the earliest crop. The selection of mid-season sorts are *Veitch's fine Spring White*, *Penzance Early White*, and *Perkins' Leamington*. For late use we have *Carter's Champion Late White*, *Sutton's Perfection*, and *Wilsone Improved*. Keep-up successive sowings of all the various small salads according to the quantity required.

CUCUMBER HOUSE.

Those who have been reading the details of the work in this department in previous weeks will not require much further instruction. We may still note a few essentials towards their successful culture. At no season ought the plants to be over-cropped, but this would be especially injurious during winter at the time they come into bearing, and when the plants are in vigorous growth they would if allowed bear enormous quantities; and we have seen gardeners careless enough to allow a large crop at first, when in a month or two the effects of it would be plainly visible in the stunted growth of the plants and the inferior quality of the fruit. Keep the leaves free from spider and green fly. "A NOBLEMAN'S GARDENER" states that spider can be killed by fumigating the house with sulphur fumes without injuring the leaves. We have tried it by painting the pipes, and have injured the leaves without killing the pest. We will certainly try the plan recommended by your correspondent. Cucumbers may very readily be grown and planted out in frames after this without much trouble. A gentle bottom heat from manure is necessary to start the plants into growth, and the temperature of the frame is kept up at night by thick coverings.

Oranges in pots now require a high temperature. The fruit requires a long period to ripen—very nearly twelve months. We like a succession of it, and the plants are put into a warmer temperature at different periods to obtain this result. Our earliest plant was in flower in January. Others are not yet placed in heat. The earliest sort is the *Tangerine*. The *Maltese Blood* and *St. Michael's* take six weeks or two months longer to ripen their fruit. When the fruit is set the plants are freely syringed, and in nearly every respect treated as the *Fig* trees. It is not necessary to repot the trees very often—about once in three years, or even less often when the plants are large. A surface-dressing of rotted manure, loam, and charcoal is very good, and it is improved by crushed bones being added to it.

GREENHOUSE AND CONSERVATORY.

At present we have abundance of plants in flower, so that the houses are very gay indeed. *Hyacinths* and *Tulips* that have been allowed to flower without forcing are in full beauty, others that have been forced are in a decaying state; and it is necessary to remove the *Hyacinths* as soon as they show signs of decay to prevent a disagreeable smell in the house: indeed all decaying flowers should be removed at once, and flowering plants should have the flowers neatly fastened to sticks if it is necessary. While attending to plants in flower it is quite necessary to attend to others for succession. *Roses* that are being gently forced should be placed near the glass, and the atmosphere of the house should be moderately moist. If small drops of water are hanging round the serrated edges of the leaves in early morning it

is a healthy sign. Green fly is very injurious, and must be destroyed at once by fumigating with tobacco smoke. The small brown maggot that attacks the buds can be picked out with a pin or needle.

Stage and other Pelargoniums are throwing up their flower trusses, and are now assisted with weak manure water applied at every alternate watering. The best is cow manure, about a bushel of it soaked in thirty gallons of water and the water allowed to stand for twenty-four hours before using it; this may again be diluted with rather more than half the quantity of pure rain water. All other softwooded greenhouse flowering plants are improved by similar treatment.

It was stated that Cape Heaths were placed out in a cold pit, or rather span-roofed frame. Their removal would have been delayed had we known that the thermometer would have registered 10° of frost; however, the plants do not seem so far to have received any injury. We have placed Camellias in the late vinery that they may make their young growths. The Vines are only just starting into growth, and afford no shelter from the sun; it has therefore been necessary to shade the Camellias. They are freely supplied with water at the roots and syringed twice daily. Epacris and Cape Heaths of the Hymalis section that have done flowering are now out back. Those plants that have grown very nearly as large as they are required are out back to within an inch of where the young wood started last year. Epacris, if it is intended to make large specimens of them, should have the young growths bent round sticks placed in the pots. The growing points of the strongest shoots may be pinched out.

Chrysanthemums require to be potted-on before the plants become root-bound. We are short of room this year under glass, and those plants intended to produce cut flowers for exhibition have been turned out of doors where they are sheltered from south-west winds. It is not well to allow the plants to be injured by frost, but they will stand 7° in a calm night without injury, and we are not likely to have it colder after this. Specimen plants are being trained into shape by sticks placed in the pots or a wire fastened under the rim.

We have a very useful pot sent by Mr. John Matthews of Weston-super-Mare for training such plants. Holes are made through the rim, to which the shoots are fastened by passing a strip of mat through them. This saves the trouble of rings under the rim, and the ties are much easier run through the holes.

FLOWER GARDEN.

The mower has been twice run over the lawn, and the walks are kept smooth and clean. Mixed borders that were dug over in the autumn and winter now require the Dutch hoe to be run through them, and afterwards the borders are made neat by raking the ground. Many gardeners say, "Never use a rake; the rougher the ground is left the better for the plants." In our own practice we do not see much difference in the growth, and when the ground is neatly levelled by the rake the appearance of the borders is much improved. Now is a good time to lift and divide herbaceous plants. If they remain too long in one place the ground becomes exhausted and the flowers are not of such good quality. Bedding plants have been turned out into turf pits, at least all the hardest of them. Others are in glass structures, where the lights can be removed entirely when it is necessary to expose the plants freely. It is not too late yet to put in cuttings of Verbenas, Heliotropes, Ageratum, Lobelia, &c. All such plants strike very quickly in a hotbed at this season. The late-pruned Roses will probably be the strongest and healthiest this season. Those that started early in the season have suffered much from frost. Auriculas are now coming nicely into bloom. The few mild days that we have had has brought them rapidly into flower. The frames are well covered up at night, and air is admitted very cautiously by day. Cold cutting winds are very injurious to the tender petals. Carnations and Picotees are fully exposed in fine weather; but the lights are kept on when it rains or if it is cold. Beds of Pinks have been hoed and raked. The plants are now starting into growth. Hollyhocks that have been kept in pots or planted out in frames during winter may now be planted out if they have been gradually inured to the weather. Dahlias must be propagated now if a sufficient stock has not yet been obtained. —J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

WESTMINSTER AQUARIUM. April 12th and 13th, May 10th and 11th, May 30th and 31st, July 5th and 6th.

ALEXANDRA PALACE. Flowers, May 5th and 6th. Roses, July 7th and 8th. GLASGOW. May 10th, and September 12th and 13th. Mr. F. Glib. Doughall, 167, Canning Street, Sec.

CRYSTAL PALACE. Flower, May 19th and 20th. Rose, June 16th and 17th.

TYNEMOUTH. May 24th and 25th. Messrs. A. Payne and J. Mills, Hon. Secs.

MANCHESTER (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.

SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fudge, 30, York Street, Sec.

SOUTH ESSEX (LEYTON?). June 18th. Mr. G. E. Cox, Wilmot Road, Leyton, Sec.

EDINBURGH (Scottish Pansy Society's Show). June 16th. Mr. N. M. Welsh, 1, Waterloo Place, Edinburgh, Sec.

COVENTRY. June 19th. Mr. T. Wilson, 8, Portland Terrace, Sec.

MAIDSTONE (Roses). June 21st. Mr. Hubert Bansted, Rockatow, Maidstone Sec.

FARNHAM AND SOUTH HAMPSHIRE. June 21st. Mr. H. Smith, Sec.

SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.

EXETER (Roses). June 23rd. Mr. T. W. Gray, Hon. Sec.

REIGATE (Roses). June 24th. Mr. J. Payne, Treasurer.

LEEDS. June 28th, 29th, and 30th. Mr. James Birkbeck, Delph Lane, Woodhouse, Leeds, Sec.

WEST OF ENGLAND (HERRFORD). Roses. June 29th. Rev. C. H. Bulmer, Credenhill, Sec.

RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.

FROME (Roses). June 29th. Mr. A. R. Baily, Hon. Sec.

MARSDEN. July 1st. Mr. J. H. Edmondson, Hon. Sec.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY. July 5th and September 18th.

SOUTHPORT. July 5th, 6th, 7th, and 8th. Mr. E. Martin, Sec.

NEWARK (Roses). July 8th. Mr. F. R. Dobney, Sec.

HELENBURGH (Roses). July 12th and 13th. Mr. J. Mitchell, Sec.

WIMBORNE. July 13th and 14th. Mr. P. Appleby, 5, Linden Cottages, Hon. Sec.

KILMARNOCK. Roses, July 18th and 19th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.

TONBRIDGE. July 12th. Mr. W. Blair, Hon. Sec.

BRIGHOUSE. July 29th. Messrs. C. Jessop & E. Bawnley, Hon. Secs.

HEWORTH (Horticultural). August 2nd. Mr. E. H. Felton, Hon. Sec.

CLAY CROSS. August 15th. Mr. J. Stallard, Clay Cross, near Chesterfield, Sec.

WESTON-SUPER-MARE. August 15th and 16th. Mr. W. B. Frampton, Sec.

PRESTON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.

SHERWORTH. August 16th and 17th. Admrs. & Neumton, Hon. Secs.

TAUNTON DRAMA. August 17th. Mr. F. H. Woodford, M.D., and Mr. Clement Smith, Hon. Secs.

MIDLAND HORTICULTURAL. August 19th. Mr. George Senior and Mr. John Rushforth, Hon. Secs.

RABOULTS (ISLE OF THAMES). August 23rd. Mr. R. B. Scharian, Broadstairs, Sec.

SEAPOINT BURE. August 26th. Mr. R. Richardson and Mr. W. Elliott, Secs.

DUNDEE (International). September 7th, 8th, and 9th. Mr. W. B. McKelvie, 25, Euclid Crescent, Sec.

TRADE CATALOGUE RECEIVED.

Louis Van Houtte, Ghent, Belgium.—*Catalogue of Stove and Greenhouse Plants, Bulbs, Roses, &c.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (C. R.).—The prices of books are stated in their advertisements. We do not recollect that of the volume you mention.

ALLAMANDA KERMIFOLIA.—"A. R." has gathered a seed-vessel from it, and wishes to know whether it has ripened seed in England.

FIG DR. HOGG'S BLACK (G. S.).—This Fig is not as yet in the market, and most likely will not be before next season. It will be advertised as soon as ready.

RUBUSCKIA PURPUREA GRANDIFLORA (R. M.).—Any of the principal florists could obtain it for you.

BOILER (T. G.).—Write to the makers, and tell them your difficulties.

PEAR OF FLOWER GARDEN (H. R.).—We do not think the centre will look well as you have planned it. Madame Vancher will grow taller than Vesuvius. Instead of the white Geranium we would have yellow Calceolaria. Lobelia pumila is rather too dwarf to be next Christine. L. speciosa grows more freely. B, C, D, and E are well arranged. All the others are good combinations.

TREATMENT OF VINES (A Young Gardener).—Remove all the shoots except the strongest one from the spur, and on the young wood the shoots should be removed to allow of 18 inches between those that remain. Guano should be strewn on the surface of the ground; the waterings will wash it into the soil. Balsam, Calceolaria, Primula, and Cineraria seeds should be sown in May on a slight hotbed.

FORCING VINES (J. T. Blackie).—They may be forced many years in succession without being injured by it; but if they are forced very early the Vine is thereby weakened, and will not produce heavy crops. Vines may be forced for two years, and the crop would not be lost if they were not forced the third.

CRIMSON PELARGONIUM FOR POOR SOIL (T. A. F.).—Wellington is the best. Gladstoll of the Gandavensis section may be left in the ground all the winter, and they will come up strongly next season. It is much better to lift them in the autumn and prepare fresh ground.

LABOUR REQUIRED FOR GARDEN (T. J. R.).—You will require a gardener, under gardener, and a boy or woman in summer; but there is such a difference in the style of keep as to make a man less in three required between high and moderate keeping. The labour quoted is for moderate keep. A youth of

sixteen constantly will be needed, if you require great exactitude in keeping and high culture, in addition to the boy or woman in summer.

PRUNING STANDARD ROSES (A. S.).—Prune them at once, cutting-back the strong shoots to three, the moderately strong to two, and the small shoots to one eye.

BONNET PELARGONIUMS FOR EXHIBITION (Idem).—Maréchal MacMahon, Nondescript, Mrs. Harrison Weir, Black Douglas, Châtaign, and Prince Arthur.

SELECT GREENHOUSE AND HARDY RHODODENDRONS (Mark).—Greenhouse or conservatory: *Aureum splendens*, Dennisoni, Edgeworthi, Henry-anum, Maddoni, Nuttall, *Javanicum fragrantissimum*, Prince of Wales, Princess Helena, Princess Alexandra, and Veitchianum. It may be that you mean by Rhododendrons for pots the early flowering ones; a few—*Altaclarens*, *Blanche Superbe*, *Broughianum*, *Coccineum pictum*, *Ignescens*, *Mars*, *Nobilissimum*, *Russellianum superbum*, *Perseplanum*, *Wellington*, *Campianum elegans*, and *Marian*. Hardy: *Admiral*, *Arthur Helps*, *Austin Layard*, *Barclay-anum*, *Blandyanum*, *Bylandum*, *Cephalus*, *Claude*, *Countess of Northampton*, *Decorator*, *Duchess of Sutherland*, *Edolphe*, *Everestianum*, *Frederick Waterer*, *Grace Darling*, *Helan Waterer*, *Henry John*, *John Waterer*, *John Waterer*, *Kate*, *Waterer*, *Lady Eleanor Oathurst*, *Leiderum*, *Lord Evelyn*, *Mæcilianum superbum*, *Madame Carville*, *Michael Waterer*, *Mrs. John Waterer*, *Mrs. John Waterer*, *Mrs. Thomas Brassey*, *Nereus*, *Ocellianum*, *Princess Mary of Cambridge*, *Quadrona*, *Raphael*, *Landfordianum*, *Sir James Clark*, *Sir William Armstrong*, *Tamerlane*, *Stella*, *The Maroon*, *The Village Maid*, *The Warrior*, *Vandyke*, *Towardianum*, *Vicomte Forceville*, *William Austin*, and *William Cowper*.

SHAKALE AFTER FORCING (Idem).—Plant it out in good rich light soil in an open situation at once.

HARDY PERENNIALS (Idem).—*Anemone japonica vitifolia alba*, *Anthericum lilastrium*, *Aquilegia californica*, *Asphodelus luteus plenus*, *A. albus*, *Astragalus vaginatus*, *Campanula aggregata*, *C. celidifolia*, *C. lactiflora*, *C. macrantha*, *C. rapunculoides*, *Centaurea phrygia*, *Cheiranthus longifolius*, *Conwallaria majalis plenus*, *C. rosea*, *Cyclamen hederifolium*, *Delphinium Beatonii*, *D. Bellefleur*, *D. Keteleeri*, *D. Madame Bichalet*, *D. William Pittier*, *Dianthus erianthus*, *D. floribundus*, *Dielytra spectabilis*, *Dodecatheon integrifolium*, *Epilobium latifolium*, *E. rosmarinifolium*, *Epimedium planatum elegans*, *Daphne striata*, *Geranium subanceleense*, *Gypsophila paniculata*, *Hemerocallis lutea*, *H. Kwanoo variegata*, *Lithospermum petraum*, *Lobelia fulgens*, *St. Clair*, *Lychnis viscaria flore pleno*, *Morina perdis*, *Myosotis distictifolia*, *Nepeta Mussini*, *Knothera marginata*, *Omphalodes verna*, *Orobis lathyroides*, *Oxytropis uralsensis*, *Pentstemon Torreyi*, *Phlox subulata oculata*, *Potentilla hybrida plena*, *Pyrethrum lanceolatum plena*, *Ranunculus amplexicaulis*, *Saponaria coccinea plena*, *Saxifraga longifolia verna*, *Spiraea filipendula plena*, *S. japonica*, *S. palmata*, *Statice latifolia*, *Tritonia aurea*, *Trollius europæus*, and *Veronica prostrata*.

DRODAR CEDAR SEEDS (G. C. S.).—The seeds you sent us are abortive, containing only a resinous fluid. It is no use sowing seeds such as those sent us; but any good seeds may be sown now up to June in a pan or box well drained in sandy loam, covering the seeds about three-quarters of an inch deep, and placing in a cold frame, the plants will soon appear. We have a fine batch of seedlings from seed had from Italy.

COPING FOR GARDEN WALL (B.).—We presume you wish a protective coping for the fruit trees, and not one for the wall, for which latter there is nothing better than stone with the joints cemented. For fruit trees a glass coping projecting about 2 feet 6 inches is best portable, so as to be only put up when the blossoms show colour, and removing in early June. The coping may be again used when the fruit commences ripening, and may be continued after the fruit is ripe if the autumn be wet and cold, to assist the ripening of the wood; but when the leaves commence falling the coping should be laid aside until spring.

TREES FOR AVENUE (Idem).—At your elevation we do not think Plane trees proper suitable for an avenue; but *Dyomora*, which is also commonly termed *Plane* tree, would succeed admirably, being one of the best trees for an exposed situation. In your situation, however, we should have *Lime* (*Tilia europæa sanguinea*), red-twigged variety, very free-growing, forming a handsome head. Elm would answer, and the best is the English, *Ulmus campestris*.

GRAFTING HOLLIES (J. T.).—Now is a proper time to graft Hollies, or just before or when they are commencing growth, the seasons being in an inactive state, and the best mode is side or whip-grafting. Budding may be performed in July.

SEMITIVE PLANT TREATMENT (Idem).—Sow the seeds at once in a pot in a compost of turfy loam, leaf soil, and sandy peat in equal parts, covering them about a quarter of an inch deep with fine soil, and keep moist, placing in a hotbed having a temperature of 65° at night, and 70° to 75° by day, a cucumber frame answering well. When the plants have a pair of rough leaves pot-off singly in 8-inch pots, returning to the hotbed, shading for a few days until established, and then admit to light and air. They are to be shifted into 6-inch pots when the 8-inch are filled with roots, and from the 6-inch they may be transferred to 9-inch if large plants are wanted. The plants require to be grown-on in heat, being tender annuals, but will succeed in a greenhouse after the middle of June.

PLANTING BREDDING VIOLAS (Subscriber, New Ross).—Plant the plants from cuttings struck in autumn at the end of the present or early in next month, stopping them if not already done, so as to form bushy plants.

FOLIAGE OF GERANIUMS BROWNED (F. P. Harborne).—The leaves are browned from exposure whilst wet to the full sun, the soil being in a wet state, the roots in an inactive state. They may, however, be injured from dipping or syringing with some solution; but in the absence of data we cannot suggest, as we could wish, a cause, or point a remedy for the disaster.

POTATOES (G. Dias).—We cannot name them from tubers only. They are difficult to identify even when they are seen with the growing plants, the varieties are so numerous and so nearly alike.

LEMONGRASS CULTURE (E. J. T.).—This (*Aloysia citrodora*) is a greenhouse or half-hardy plant, deciduous, requiring to be kept dry in winter, but with sufficient moisture to keep the wood from shrivelling. The plants to be cut-in in March or early April, each shoot to two or three eyes of the old wood, keeping rather dry until the young shoots are 2 or 3 inches long, then repot, removing most of the old soil, repotting in the same size of pot, shading from bright sun, and sprinkling overhead twice daily, watering moderately until the potting is recovered, then more copiously, admitting to

air and light freely, shifting into a larger size of pot when the one it were first potted into is filled with roots. A compost of fibrous light loam two parts, half a part each leaf soil or old cow dung, and sandy peat, with a sixth of silver sand will grow it well. So far from requiring a stove temperature it requires nothing more than safety from frost, succeeding admirably planted out in summer. Its foliage milder from being kept too close and moist.

BREWING CRICKET GROUND (Idem).—We should grow grass seeds again as soon as possible after the middle of the present month, raking the ground with an iron rake before sowing, and after sowing roll well, and leave for a month or six weeks, when mow lightly with a scythe, keeping well rolled afterwards, and frequently but not closely mown, the oftener rolled the better.

CUTTING-DOWN PAMPAS GRASS (F. M. S.).—We do not remove other than the flower stems, and cut away, when the plants commence growth, any unsightly growths of last year, the plants desiring a kind of shelter in winter and spring from the growths of last year, and plants not in dressed ground we have not touched for many years, they being much finer than the dressed plants. The plants cut down will not, we think, take any harm. It certainly will not prevent their flowering this year, and will not materially affect the growth only in exposing the plants to the cold of spring and early summer. It will start into growth in a few days.

PLANTING PAMPAS GRASS AND TRITOMA (Idem).—The present is a good time to plant these plants; but they certainly ought not to have been cut down—the dead parts only removed. Top-dress with short manure now, and water around the plants copiously in dry weather after the middle of May up to September inclusive, with weak liquid manure.

DEODORIZING LIQUID MANURE (Idem).—Chloride of lime is a disinfectant and deodoriser, and may be employed at the rate of 1 oz. per gallon; but the best of all deodorisers is the soil, to which applied, its offensive effluvia will soon be dissipated. The effluvia would be subdued by dilution with water, which it appears to us is what you require, and nothing more.

NAMES OF FRUITS (E. S. H.).—Both specimens are Winter Greening.

NAMES OF PLANTS (G. C. S.).—1, *Primula verticillata*. (T. W.).—1, *Cornus mas*; 2, *Hibbertia volubilis*. (Rob Roy).—2, *Deveilla camarisensis*; 3, *Poly-podium Billardieri*; 4, *Daphne Mezereum*; 5, *Adiantum* sp.; 6, *Polystrichum angulare* var. (E. H. B.).—Specimen quite insufficient. (J. Alexander).—1, *Aster cespitosus*; 2, *Dalechampia rosea*; 3, *Begonia* (hybrid); 4, *Specimen insufficient*; 5, *Phajus grandiflorus*. (E. H. H.).—*Goldfussia azisophylla*.

POULTRY, BEE, AND PIGEON CHRONICLE.

PACKING EGGS.

We again have the egg season upon us in full swing, and once more we have a few words to say upon the subject, but it is more to the packing of the eggs that we would refer to on this occasion. Everyone nearly has their pet way of sending their eggs, and doubtless there is something to be said for each system whether boxes or baskets, chaff or hay, be in use. We would not pretend to dictate or to say that one way is especially superior to another, for we should be inundated with letters from indignant egg-packers, each exemplifying their assertion in praise of their own method by some wonderful successes, and we should believe them, for we have known eggs hatch, and hatch well, which have been packed in divers ways. Perhaps the most remarkable of all cases which have come under our own knowledge is when twelve eggs were brought from Malta in a *pie dish*, and eleven of them hatched. We actually saw the chickens and know it to be true.

In just touching on the various ways of packing in use we would only put our young hands on guard against faults they may be led to make. When boxes are used the labels must be nailed on before the eggs are placed in them, and the lid be sewed down, not nailed. Although we have known eggs hatched in boxes where nails have been used, still it is a great chance if the eggs do not get jarred by the hammering. Then the points of the nails used for fastening down the label should be clenched on the under side, or the points might run into the egg; for only last week we had a package of eggs from a gentleman where the utmost care had been taken to sew down the box, but the label had been afterwards fastened down with inch nails and had penetrated the shells of several eggs. We cannot consequently recommend amateur packers to be too careful over this. Then every egg should, in our opinion, be securely wrapped in a piece of paper; it helps so much towards guarding the eggs from being jarred in transit. But even here we know of one of our greatest Dorking breeders who has marvellous success with the eggs he sells, and who simply places the eggs in chaff and ties down the box, using neither nails or screws; and we saw a letter the other day from a gentleman in Jersey, stating he had hatched nine chickens from twelve eggs so packed; but the secret here is the string—we are convinced of it. It makes something for the many hands a parcel of this kind has to go through to hold by, and this is the greatest point of all. We would urge on everyone, Never mind whether you pack in hay, or chaff, or sawdust, or moss, let the box or basket, whichever is used, have a handle, either made of string on the box or of wicker on the basket, but let there be a handle. No one but an eye-witness has any conception how a handleless package gets knocked about. One porter passes it to another, and perhaps he to the guard; or it has, may be, to go by a carrier, or a servant is sent to the station for it, and so the harm is

done. It is not the distance does the injury, but the knocks and tumbles the packages get. Now if they all had handles they would in most cases certainly be taken up by them, and the chance of the eggs hatching would be greatly increased.

As we said, we wished to disparage no pet ways of packing, but we would venture to warn our friends against the use of bran, oats, or sawdust—i.e., when they are used alone; for however full the packages may be filled with such mixtures, a long journey will shake the contents down much closer, and the eggs will very probably come in contact, when they will necessarily be cracked, and the contents running out from one or two so cracked eggs might ruin a whole sitting. We have, moreover, ourselves seen eggs in a package pierced by the sharp ends of oats; but this would not often be the case except in very thinly-shelled eggs, and such should not be sent out at all as a rule. One or two of our friends use moss, and we believe with immense success, but even then we should always recommend the box being lined with good and soft hay first.

In the use of baskets we have noticed so many which are made with a small round bottom, sloping up to a larger top; but these baskets are so liable to tilt over. We shall always have them made sugarloaf-shaped, when they are able to withstand a good shaking without fear of falling over. We have used ourselves with great success baskets of the shape of the wicker cases in which spirit jars are often encased. But of all egg baskets a long way ahead are, in our opinion, those used at Early Wood. They are oval, and are just such as country women go for the Saturday shopping with, having huge upright handles, which it is impossible not to take hold by, for they being tied together at the top form a most perfect handle.

All must allow it is but correct for a sitting of eggs to be properly and securely packed when sold and have to go any distance by rail or carriage, and that the purchaser naturally looks for it. We would, however, ask purchasers not to be too quick in writing sharply about the non-success of a sitting, for often the blame may be traced to their own doors; and, if not, one severe fall at a station or one heavy jarring would often ruin the whole success of a sitting. And we hear, too, repeatedly of failures among the eggs of our most honest and upright vendors, whose other eggs sent out have done well, when the cause could only be traced to some such accident as mentioned above. But that a handle easy to lay hold of is of great value to every egg-package we are quite sure, and would always recommend purchasers to insist upon.—W.

EARLY CHICKENS.—No. 1.

THE production of early chickens is one of the chief desiderata in keeping a flock of fowls. That this is not easy to accomplish the high prices which they command in early summer will vouch for. Success in this line demands the concurrence of several indispensable, and to induce this concurrence the average poultry-grower appears, inferring from the result, to be unfitted. There are some persons who seem instinctively fitted for this business, and, whether the season be favourable or not, always succeed in rearing a few early chickens. Every farmer, and in fact everyone that lives in the country or in a village, keeps more or less fowls, the object in view with the majority being a constant supply of eggs and poultry for home use rather than any expectations of profit from sending them to market. Indeed the opinion is widely prevalent that keeping fowls does not pay otherwise than in the convenience of having a basket of fresh eggs to draw upon for breakfast or a perchful of young chickens for dinner. To make sure of a constant supply more fowls are kept than are necessary; the surplus goes to market; and it is this surplus which to a great extent supplies our cities. Thus it may be explained why the person who believes that fowls do not pay still persists in sending them and their products to market. But whatever doubt there may be about the profit to be derived from eggs and late chickens, there can be none whatever about the profit from the early ones. The chief obstacles which render their production difficult are the scarcity of hens that will lay and want to sit in the winter, the inability of the hen to impart the requisite amount of heat to the eggs during severe weather, and the want of sufficient hardiness in the young chicks to endure cold winds and storms until they become feathered. The object of this essay is to indicate by what means these obstacles can be partially overcome.

SELECTION OF BREEDING STOCK.—We must bear in mind that hens do not lay while moulting, which process consumes two or three months. Hence if their annual moult be deferred till late in the fall, they will not recover from it in time to lay and hatch-out a brood of chicks until the spring is far advanced. Consequently we should select for our breeding stock in the first place hens that have moulted early and become fully feathered by the 1st of December at latest; in the second place we should select pullets (and they will in most cases make up a great majority of the flock) that were hatched from the middle of April to the middle of June. They will commence laying from the 1st of November to Christmas, and become broody during the latter

half of winter. Earlier pullets will be earlier, want to set in the fall, and very probably moult about Christmas, thus becoming useless as early breeders. Later pullets will not become sufficiently matured to lay until spring. There is always a strong temptation to sell off all the early pullets, since they are worth so much more in the markets than the late ones; hence a lot of pullets of the right age can seldom be bought in the fall. To obtain such we must begin in the spring to rear them, or buy them when half-grown during the summer. We must also bear in mind that cocks lose their vigour while moulting. They usually moult late, hence they will not recover their vigour till late in the season; and if we depend upon them, a large part of the winter-laid eggs will be unfertile. Our choice then must be cockerels, and they should have been hatched in March or April, so that they may attain full size and become matured when winter arrives.

CARE OF EGGS.—The sooner they are gathered after the hens leave the nest the better. Half an hour of exposure when the day is cold and the wind high will destroy their vitality. They should be kept where the temperature is not allowed to go below 50° Fahr., nor above 80°; or better still, where it varies only between 60° and 70°. Avoid keeping them where they will be exposed to cold draughts of air. If they are to be kept more than a week before sitting it would undoubtedly be advantageous at any season to wrap them in paper and place them small end down. The paper prevents evaporation of their moisture, thus preserving them more nearly in the condition of fresh-laid eggs.

SITTING THE HENS.—A hen will keep her eggs warm through ordinary winter weather if her nest is well protected from the wind and the bottom of it be packed solid with fine sawdust (or any material that will not conduct heat), and lined with fine soft hay, well packed and bedded down. A moderately freezing temperature does not abstract heat very fast if the surrounding air can be kept at rest; but we seldom get three weeks in the winter or in March without a night or two when the thermometer sinks to the zero neighbourhood, or without a sharp north-wester or a chilly penetrating north-easter, and these are the times when the embryo chicks are destroyed; hence our hopes of success must rest in providing a situation for the sitting hens where we can prevent the temperature from falling far below the freezing point, and from which cold winds are entirely excluded. An ordinary cellar would fulfil the conditions, but the hens are quite likely to become unhealthy on account of dampness and want of pure air and sunlight. The one thing to be done is to build a house adapted for the purpose. Select a situation where there is a slight inclination to the south, dig 2 feet deep, and construct a wall on all sides but the south; remove the earth from the south side if the slope is not sufficient to leave it clear down to level of floor; 4 feet will be high enough for the posts of the building that stand in the wall, and 6 feet for those on the south side. The room should be plastered, and low windows reaching to within a foot from the floor should occupy the whole south side except the doorway. Around the base of this room the nests should be ranged; the floor of the room will serve for the bottom, and the sides for the back. Set up the cross partitions, and nail the top to them; a strip 5 inches wide nailed to the partitions in front and close to the floor will hold them in place and make the front of the nest. A door of narrow slats or wire netting should close the space above this strip, and be hinged at the top. For large and heavy hens the nest should not be less than 20 inches square; if they are smaller the hen in turning around is cramped for room, and in consequence is more liable to break her eggs. The packing of the nest should come nearly to the level of the top of the 5-inch strip, so that the hen upon entering will not be compelled to step down in getting on the eggs. The nest should be packed flat in the centre, and rise only when it approaches the circumference to keep the eggs from spreading too far. If it is concave throughout the eggs press against one another, and the hen has a great deal of difficulty in hooking them over with her bill; she will probably leave those in the centre undisturbed, and besides she will often pull one or more on top of the rest, when some will almost surely get broken. When a hen becomes broody remove her to one of these nests; she should, however, be allowed to remain two or three days on the nest in which she has been laying, for hens sometimes act whimsical. The removal should be made just before night. Put a hot brick in the nest half an hour before, and with it several china eggs; then, when the hen takes the place of the brick, she will find the nest and eggs warm, which will be a strong inducement to her to make herself at home in her new quarters. Close her in immediately, and leave her till the second morning to become wonted to her new nest. On the second morning after her removal take her off the nest and give her the freedom of the apartment with corn and clean water. She will probably go on the nest again in fifteen or twenty minutes, and then her sitting of eggs slightly warmed should be substituted for the china eggs. If she fails to return to her nest she must be caught and replaced; if she is then disposed to remain there give her her sitting of eggs. With a little watching she will make a good hen; but

should she prove restless and discontented discharge her at once. The nest should be kept closed at all times, except when the hens are off for refreshment and exercise, for which once a-day ought to suffice. This method of sitting hens admits of keeping such hens only as are quiet in disposition and gentle enough to not object very seriously to being handled when broody. Brahmas and Cochins possess these qualifications in a high degree. When the apartment becomes well tenanted the constant presence of the keeper will be needed for an hour or two every morning to let the hens off the nest and make sure that they get back again all right. When a sitting hen that has been removed from the nest in which she laid is given her liberty she will almost surely return to that nest, and in this instinct of the hen lies the chief difficulty in the way of hatching-out chickens in large numbers. These hens will enter the wrong nest; two of them will get on one nest and leave another bare, fights will be of frequent occurrence, and a sitting hen is (in Hibernian parlance) a "wicked" fighter; the result will be a number of broken eggs. When eggs get broken in the nest the remaining ones should be washed clean in lukewarm water, since the substance of the broken eggs becoming pasted over the shells renders them impervious to the change of air necessary for the embryos. When the atmosphere is very dry the moisture evaporates through the shell, and the eggs should be moistened if it occurs during the latter half of their period of incubation. This is easily done by dipping the hand in lukewarm water and pushing it under the hen, repeating three or four times. After the eggs have been sat on one week they should be examined, and the unfertile ones removed and fed to newly-hatched chicks. Eggs with clear white shells are transparent enough to be tested when sat on four days, or even three; but the dark-coloured eggs of the Asiatics are so opaque that the fertile ones cannot certainly be distinguished in less than a week. An instrument for testing eggs is readily made by rolling up a thick sheet of paper or several sheets laid together, making a tube 10 or 12 inches long and 1½ inch in diameter. To test the eggs place the eye at one end of this tube and the egg at the other, directing the sight toward a window or open door. If the egg is fertile the observer will see a dark spot the size of a pea, with red strings resembling magnified spider's legs ramifying therefrom. Oftentimes when the shells are thick and comparatively opaque these will not be seen. In that case observe the air chamber in the large end of the egg. If it is large and its borders are well defined, and at the same time the remainder of the egg is of a homogeneously reddish hue, the egg is fertile. Provided several hens are set simultaneously after rejecting the unfertile eggs, the sitting of one hen may be distributed among the others, and she may be provided with a fresh sitting. Some of the chicks are oftentimes slow in getting out of the shells, and the hens become hungry and restless and move about on the nest, frequently mashing a chick or two, or breaking the shells in upon those that have not yet hatched. These losses may usually be prevented by taking the hen off the nest, and with her a handful of the young chicks, and giving her food and a chance to stretch and take a little exercise. Thereafter she will return to the nest, call the chicks under her, and sit contentedly another day. A dusting place should be provided for the hens in front of the window, and the use of this when a sprinkling of wood-ashes or sulphur is added to it and also to the nests will keep the hens free from vermin. A great benefit will be derived therefrom in the quiet and contented deportment of the hens upon the eggs, as well as in their health and that of the young chicks. A stove will be required to complete the furniture of this apartment. When the temperature is likely to fall to the freezing point, keep fire enough to maintain a temperature of about 50° Fahr.

CARE OF CHICKS.—An apartment similar to the one already described will be needed for the accommodation of the young chicks; for if they are kept in the same apartment with the sitting hens, the latter become uneasy, and make efforts to obtain possession of other hens' chicks. Coops that can be readily carried in and out of this apartment should be used. They should be as light as possible, and have floors so that the hen and chicks can be transported in them. On all fine days—in fact, on all—except they are very cold or stormy, the coops should stand outside, in a situation where the chicks can bask in the sun without feeling too much wind. If the coops are well sheltered, and are covered at night, it would not be necessary to put them inside at all during moderate weather. But during storms and very cold weather it is imperatively necessary that they be taken inside; a fire to take the chill off the air and keep the apartment dry will be found wonderfully conducive to their health. And besides, a greater amount of fresh air can be given them in consequence, which they very much need when they are compelled to remain long in their apartment. At about six weeks of age the chicks are sufficiently feathered to do without all this care. In the matter of feed, a few meals of boiled eggs to begin with will give them a good start. Warm feed and drink are better for them than cold at this season; and both should be given often—not less than eight

times a-day, beginning as early in the morning as they can see to eat, and ending at night under the same conditions. Whatever variety of ground feed is given it should be fresh ground and from sound grain. That there is a great amount of labour and expense attached to all this I am well aware; but the cost of fuel during a few cold spells, roughly finishing the interior of the rooms required, and the extra amount of care demanded by the chicks, all of which constitute the difference in cost between early and late chicks—the care of the sitting hens, when many chicks are reared, being just as necessary late in the season—will be counterbalanced many times over in the difference of prices for which they can be sold.—(*New York Tribune*.)

SITTING HENS.

EVERYONE who has kept the Asiatics has been troubled, no doubt, by their sitting propensities. Usually there is no convenient coop to confine them in, and after they have been on the nest a day or two their owner, in sheer desperation, shuts them in the first barrel or box he comes across. The hen generally manages to get out in a couple of days, and the consequence is she is strengthened in her stubborn desire to sit. If her owner succeeds in breaking her up in two weeks he congratulates himself upon his good luck. If the hen is taken off the nest immediately when she first commences to sit there will be no trouble in breaking her up. Very soon we will begin to be troubled with sitting hens again, and the winter is the best time to fix a coop to shut the sitters in.

I have had in use for two years a coop for breaking-up sitters, and I can consistently say it is the best thing for the purpose I have ever seen. The coop is 5 feet long and 2 feet wide; height 2 feet. The floor is made of inch square pieces placed 1 and 1½ inch apart. The front part of the coop is of lath. The hen cannot very well sit on the slatted floor, and she will generally give up in disgust, and in a day or two will be willing to go back to her old quarters and do her duty. They do not like the slatted floor—it does not agree with them, and herein lies its efficiency.—D.—(*American Fanciers' Journal*.)

ZEBRA FINCHES.

I HAVE at present a pair of these Finches with a nestful of young birds. This is the second nest they have had this year, the first set of eggs, ten in number, being all unfertile; but these nestlings all seem to be going on well.

I provided the old birds with pampas grass to make their nest with, of which they used a large quantity. The inside of the cage is lined with virgin cork fitted-up in a rustic fashion. I feed them entirely on millet seed and hard-boiled egg. They are a most interesting and affectionate little couple, taking it by turns to sit.—E. DRUMMOND, *Bath Nursery*.

THE WONDERS OF A BEE HIVE.—No. 7.

THE courage of bees, and their consciousness or knowledge of possessing destructive powers, are both alike wonderful. I have often admired the instinctive craft and cunning of wild ducks when they are disturbed in their nests. On such occasions they noiselessly roll themselves off their eggs, and appear as if they are wounded and quite unable to fly. On being pursued they flutter and roll over and over again till they succeed in tempting their pursuers or disturbers from the neighbourhood of their nests, and then take wing to the astonishment of those who run to catch them. Bees in defending their hives courageously face every danger and every foe; they will attack a lion as readily as a fly. In defence they are dauntless, and never seek the protection of barricades of any kind. In this work they appear to despise craft and stratagem. They neither quake nor quail before man or beast. No amount of pain or suffering will cause them to flinch. Many times have I seen bees rise to attack me after having received several knock-down blows from my open hand. Bees may be killed or disabled and thus conquered, not otherwise.

They are furnished with wonderful weapons of defence. They have spears of the finest polish and sharpest points ever seen by human eyes. Their spears are connected with bags of venom, and apparatuses which act and move after being separated from the bodies of bees. Some six and thirty years ago I went one evening to the Polytechnic Institution in London, where there was amongst other things a microscopic exhibition. A bee's sting and a No. 6 needle used by ladies in sewing were magnified together by way of contrast. The needle appeared like a great, blunt, rough bar of iron fresh from the blacksmith's forge and hammer; and the sting appeared to be (though magnified thirty thousand times) without flaw or indentation, and possessing a polish and point of exquisite beauty and fineness.

The stings and venom-bags of bees are of course connected; and it has often been said, and believed, that the heels or bases of the stings rest on the bags, and that when the points of the stings are being inserted the pressure causes the venom to flow

along grooves of the stings into the flesh or part stung. This may be correct, but we know that bees can poison their arrows near their points before they come in contact with anything. Let anybody catch a bee by both wings and cause it to project its sting, and he will or may see a drop of venom attached to the sting near its point, and this he may wipe off with one of his finger nails and taste: we have frequently done it. The sweets of a storehouse of bees are tempting alike to men, beasts, and creeping things, and the wisdom of the Creator in furnishing them with such weapons of defence is manifest. But for this provision bees would have been destroyed by pillage and plunder centuries ago.

A domesticated monkey found himself perched one day on the top of a hive of bees, and there heard a buzzing sound beneath him. He gave the hive a shake, which made the bees make a greater buzz and come to the door of the hive in great numbers. Another shake from the monkey caused them to rise to defend their citadel. They had their revenge, and stifled the monkey's curiosity by stinging him to death.

In defending their homes and possessions, bees, I have said, resort to no kind of shift or shuffling, but fairly meet every foe in open field—in one word, they are artificially courageous; but when they become aggressive and encroach on the rights and possessions of others they are cowardly and cunning, resorting to all the shifts of stratagem. In witnessing the stealthy conduct of robbers I have been provoked to knock them down many a time. The great characteristic of Ligurian bees is their robbing propensity. By universal acknowledgment they are "Italian brigands."

Bees in stinging animals of all kinds lose their stings and destroy themselves. But in using them in fighting other bees they hurt and kill without injury to themselves. A large swarm may be wholly destroyed by the stings of a smaller swarm if it be clumsily and unwisely cast into the hive containing the smaller number. We cannot explain how it happens that bees kill one another without hurting themselves. The barbs on the point of the sting of a bee are a wonderful provision, though they do not appear to act in the body of another bee.

Some twelve or fifteen months ago I made some remarks in this Journal on the five senses of bees—viz., smelling, touching, tasting, hearing, and seeing—all of which are perfect and acute. No intelligent, open-eyed man can be long amongst bees without getting abundant and striking evidences of the existence and power of all these senses. How keen their sense of smelling must be in finding a small honey-flower in the centre of a forest or field! How soon bees are disturbed and discomposed by the presence of a strange bee in their hive! How readily they smell honey in houses, and often try to reach it by going down the chimney or through the keyhole of the door! We mention the senses of bees here, not with a view to dwell on or exhibit their powers, but simply to let the reader know that bees possess all the five senses, that they are all necessary in the economy of bees, and their powers are often manifested in a marvellous manner.

The manufacture of the material of combs is one of the wonders of a bee hive. Bees do not gather it, but in a sense create it. Wax is both a secretion and an excretion of bees. It is manufactured from honey, sugar, or treacle in their bodies, and is excreted on their abdomens. The wax first appears in lamina or flakes on the belly (in one of the rings) of a bee, one flake on either side. How these flakes are detached and afterwards manipulated cannot be well explained. But the wonder is that bees have the power to secrete wax when they like. It is really a creation of their own will. Where in the animal world can we find a power or manifestation of voluntary secretion? The secreting of wax is a voluntary action on the part of bees. They make wax when they like, and when they do not want it they do not make it. If the bees of a full hive in which no combs are in course of erection, and no wax produced, be driven into an empty hive, they commence at once to secrete wax and build combs. The closer and longer we observe bees at work, and the more we study this power of voluntary secretion, the more wonderful it appears.

Honey as a secretion of plants in a crude state is gathered by bees and carried to their homes, and is there sweetened, thickened, and greatly improved. It is there made into honey proper. No one can approach the subject of swarming without finding both a first and a second swarm of wonders, all of which baffle and beggar description. Whenever we attempt to study the phenomena of swarming we find ourselves in an entanglement of fancies, and cannot advance very far. Swarming is an instinct or law of the honey bee. It is as natural for bees to swarm as it is for a flake of snow to dance and dandle in falling, or as water to mingle with water. But what thoughtful preparation is necessary before swarming takes place! Royal cells must be built, and royal infants cradled in them. Drones, too, must not be forgotten; some must be provided. If there be no drone cells in the hive a few drone eggs are set in worker cells. Nothing is forgotten in preparing for the advent of swarming. The combs of the hive are filled with brood, and the hive itself

is crowded with bees. Now, which bees will emigrate, and which remain at home? Those that go must take three days' rations with them. How busy the scouts are in looking for a place to go to! A place has been chosen, and the whole community know. "If it rain or be cloudy or cold we sha'n't go;" but the sun shines, and the signal is given inside the hive to depart. What a rush, and gush, and stampede! Thirty thousand bees bidding farewell to their companions, and leaving the comforts of their home never to return, full of enthusiasm, and making the air ring again with their joyful shouts! Brave and wonderful bees, we wish you prosperity wherever you may find a home. But why settle on a branch of a tree? They cannot abide there. Have they ulterior intentions, and merely congregate and rest there for a short time? I am of opinion that in settling on the branch of a tree they have no ulterior intention of departing to a place of protection and convenience. It is natural for swarms to alight near home on trees, bushes, hedges, or prominent objects. In ninety-nine cases out of a hundred they alight on one or other of these. If the scouts sent out before swarming find a suitable hole and cavity in a tree or wall, or roof of a house, the swarm goes direct to it without halt or hesitation; and it is an easy mode of getting swarms cheaply to expose hives filled with empty combs in a garden in the neighbourhood of bee-keepers. The people who wilfully do this are dishonest to the backbone, coveting and stealing and retaining that which belong to their neighbours.

If swarms are not hived from the branches on which they alight, scouts are again sent off to find more comfortable and convenient homes. If they succeed the swarms will go to them before sunset. The scouts sometimes do not succeed for days, though they go far and near. Sometimes no cavity in tree, or wall, or roof can be found, and swarms have been known to seek lodgings in a sitting-room of a house, and enter by an open window. Some of the American writers on bees are foolishly extravagant and fanciful. The Rev. L. L. Langstroth says, "I find a swarm can be determined to some selected spot by an old black hat, or even a mullein stalk, which when coloured black can hardly be distinguished at a distance from a clustering swarm. A black woollen stocking or piece of cloth fastened to a shady limb, in plain sight of the hives, would probably answer as good a purpose before first swarms issue. The bee-keeper may educate his favourites so that they will alight where he likes." This is perfect nonsense, and is the outcome of a very fanciful gentleman. Bees are not such blind simpletons as to be attracted by a black hat, or stocking, or mullein stalk. In most cases swarming bees never saw a clustering swarm since they were born, and nothing like it can have the slightest influence on them. Another American clergyman gathers dead bees and strings them like beads, then rolls them into a ball as large as an egg, which he hangs on the end of a stick like a whip-handle, and calls this ball of dead bees "a bee-bob," dandling it amongst his bees when swarming to make them settle on it. Poor fellow! his bees select the place they go to, and neither he nor his bee-bob can divert them from it.—A. PETTIGREW.

ITALIAN v. ENGLISH BEES.

The question keeps cropping up in the pages of this Journal and elsewhere relative to the superior merits of the Italian or English bee. That they are both good there can be no manner of doubt, but which is the best? or is one so superior to the other as to make it desirable to go to the expense and trouble of getting rid of the one and substituting the other? These are constantly being asked, and we have answers varying and conflicting. Mr. Pettigrew has more than once, and again quite recently, challenged a trial or comparison of the two kinds in the same garden and under like circumstances of management, for he is firm in his attachment to the dear old ugly English bee, whose utility has been so abundantly tested and proved by himself beyond question. If we could have before us a balance-sheet of his apian venture during the last half century, I think we should all of us be reconverted to our old admiration of the bee of whom all our English poets have sung from time immemorial, and yet it is in comparison an ugly bee. So sang Virgil eighteen hundred years ago. He describes it as "*deterior visu*"—i.e., "more ugly to behold" than the handsome native of the Italian Alps which had won a position in the neighbourhood of Mantua; and the appearance of the bees generally he speaks of as follows:—"*Alia turpes horrent; cui pulvere ab alto quum venit, et sicco terram spuit ore viator aridus*." Very uncomplimentary language this, which describes Mr. Pettigrew's favourites as "vilely rough to look at," and "resembling the saliva which the dry and dusty traveller spits out of his mouth." Whereas his favourites, "*Elucens alba et fulgore coruscant ardentis auro, et paribus lita corpora guttis*"—they "shine forth conspicuous, and flash in the sunlight, burnished with gold and adorned with spangles in regular order." Nor does Virgil merely describe the beauty of this bee—in somewhat exaggerated terms it must be admitted; he speaks of its superior vigour:—"*Hac potior suboles*," and plainly indicates

his belief in its hyper-excellence as a honey-producer:—*Videlicet, "hinc celsi tempore certo dulcia mella premeas;"* "hence you will obtain in good seasons delicious honey" from those as from no other bees.

Now, Virgil writes about bees as a man who thoroughly knew his subject, as far as any man knew about bees in his day. He kept them as a bee-master. He knew "what was what;" and therefore I have no doubt that in the plains around Mantua, and far beyond, the Italian bee was the acknowledged breed of superior excellence for appearance, for breeding power, for honey.

Turn we to modern times. As for Italy, although they have apicultural societies there, we are not so well able to say what the folks about Mantua think about Virgil and his experience, or what their own experience is. In Germany we have had the testimony of all the greater bee-masters, as Von Berlepsch, Dzierson, &c., in favour of this bee. They tell us the same tale—all approve of it, all give it the palm of superiority. If any change of opinion has come over them we have yet to hear of it. Of French bee-keepers I know nothing, nor of those in Switzerland, although the latter are certainly great bee-keepers in a primitive way. Perhaps some of your travelled readers can give us some information here. We shall be very thankful to them for it.

I now turn to America. I have before me the twenty-second edition of King's "Bee-keepers' Text Book," which, as I learn from the title page, has "run through eight editions of nineteen thousand copies in less than three years." If multiplied editions of a book and an enormous sale are to be taken as any test of its value this book must be an authority; and it must tell the truth, or it would not flourish, least of all in such a country as America. Moreover, it gives its authorities by name, and these authorities are well known as the most eminent bee-keepers and highly respectable persons, who cannot be credited with having fabricated wilful untruths. They all speak in favour of the Italian bee; it is a chorus of approbation from all parts of the Union that reaches our ears. But more of this in another paper.—B. & W.

TWO QUEENS IN ONE HIVE.

On the 7th of July, 1874, I put two swarms from different places into the same hive. The next morning I observed that one-half of the united family were hybrid Ligurians, with the yellow band as clearly marked as possible. It is now more than a year and a half since the two swarms were united; but there are still the two sorts of bees in the hive, and as far as I can judge the numbers are in very much the same proportion as at first. The only conclusion at which I can arrive is, that during the whole time the two queens have lived peacefully together in the same home.—H., *Tunbridge Wells*.

OUR LETTER BOX.

HAMBURGERS TEMPERING (W. W.).—Hardly any fence will confine Hamburgers. They fly like Phœbeas and delight in the exercise. No amount of food will keep them at home, and there is in consequence a considerable loss of eggs that are laid out of bounds. The cutting of one wing will be found effectual in keeping them at home, and as it is only necessary to cut the nine longest feathers of the wing the bird is but little disabled. These need only be cut to within half an inch of the beginning of the quill, and the operation entails no more suffering on the bird than we incur in cutting our own nails.

FATTENING GUINEA FOWLS (Sussex).—You can fatten them by shutting them up in coops and feeding on oatmeal or barley meal mixed with milk. They may be kept in good, almost fat, condition if they are fed regularly when at liberty with the same food.

SCOTCH GREYS OR DUMFRIES (Glydesdale).—They should have very square bodies, ample tails, and single combs. In perfect specimens the legs should be so short, and the wings should be carried so drooping that the former should not be seen.

YOUNG PIGEONS DYING (E. R. T.).—We are not surprised at all your young Pigeons hatched in February dying, and if all have died in March we should not either be astonished, such weather as we have had. Indeed no fancy Pigeons should be allowed to breed at all in February; they should either be separated or all nests and pens removed from them. The birds, if good fancy birds, are sure to die, and the parents be weakened. March is quite soon enough, and the later the better. Last year we did not raise any until late in April, neither shall we have any this year, and our best birds were raised, as almost always they are, late in the season. Fancy birds are delicate: the parents leave their young for a short time as is natural, and cold seizes them, and they die early or gradually. There is no greater mistake than to breed early; the birds if they live are coarse, which in most varieties of fancy Pigeons is a fault.

CANARY PAINTING AND BREATHING WITH DIFFICULTY (France).—From the description given in your letter the Canary evidently is suffering from asthma. The difficulty of breathing is the cause of the bird falling to sing—a natural consequence not only with birds but with human beings, who cannot feel in tune when suffering from throat or lung diseases. The weather we have of late experienced may in all probability have encouraged or brought about the bird's illness. Yours is not the only instance. Keep the sufferer free from draughty air, and cover up the cage when the bird roosts. Soak the rape seed before giving it. Some plain blanc soaked in sherry wine, with the bread-and-milk diet occasionally. A little scraped liquorice in the water fountain will do good. During the spring season administer one or two drops of cod-liver oil twice a week, but let it be done tenderly and cleverly—that is,

without either opening the beak wide enough to hurt the bird or rolling the feathers with the oil. The best plan is to let someone else open the bird's beak with a bodkin or stocking-needle, and then you will be able the more effectually to deposit with a quill or fine stick sufficient oil on the back part of the bird's tongue or in the throat. Keep away sweet cake or sugar, and in place of the latter give a small piece of salt.

CANARY WITH A "COUGH AND CROAKING" (P. E. T., Aston).—Treat your Canary the same as recommended above. Let the bird be disturbed as little as possible, for any excitement increases the difficulty of breathing, which in many instances of asthma is most distressing. Recovery is almost hopeless when birds are so afflicted. There is poor chance of a Canary doing any good when once attacked. Our most effectual cure is sharp and sure, and replacing with a young healthy bird. Still it may be hard to part with a pet. It is anything but agreeable to witness the lingering torture day after day or week after week of a bird wheezing and panting and "croaking" for an existence. Just now dandelion may be given with beneficial effect to Canaries either ailing or well, and as soon in the summer as you can obtain the spikes of ripe seed of the plantain root give them to your bird.

RABBIT WARREN (D. C. P. H.).—Have the space enclosed, and a bank of sandy soil on two or more of its sides, the bank to be a yard high and 2 yards wide. The open space is better turfed. The stock should be the common grey variety.

APIARIES (S. H.).—We do not at this moment recollect any English works on bees which treat of the structure of apiaries, except "Bevan," who devotes a chapter to the subject, and gives a frontispiece view of his own.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.						Rain.
	Barom. ter at 3 p.m. and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		In. sun.	On grass	
		Dry.	Wet.			Max.	Min.	In sun.	On grass			
1876.												
March												
April.												
We. 29	30.235	deg.	deg.	S.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	0.018
Th. 30	29.526	48.1	46.1	S.W.	41.0	54.4	45.1	94.3	42.3	—	—	—
Fri. 31	29.651	47.3	48.9	S.W.	43.5	55.8	40.6	100.5	35.5	—	—	—
Sat. 1	29.658	48.1	46.8	S.E.	48.0	59.3	43.5	104.2	32.8	—	—	—
Sun. 2	29.971	48.4	45.6	N.W.	44.4	54.2	40.9	89.5	31.8	—	—	—
Mo. 3	29.954	49.7	44.5	S.	43.8	53.8	37.3	101.7	30.4	—	—	—
Mo. 8	30.387	48.8	43.4	E.	44.6	58.4	34.8	81.0	27.1	—	—	—
Tu. 4	30.444	51.9	48.8	W.	42.7	56.7	36.0	109.1	27.4	—	—	—
Means	29.980	48.7	45.4		43.3	59.4	39.5	98.3	32.6	0.012		

REMARKS.

29th.—Rather dull morning, but soon cleared off; fine afternoon and evening.
30th.—Beautiful day and night; the sun bright and warm.
31st.—Another bright spring day.
April 1st.—A fine morning and early part of the day, but rather misty, and early dark in the evening.
2nd.—A very fine day throughout; rather less bright about 4 P.M.
3rd.—Hazy and dark (for the time of year) between eight and nine; but except being slightly hazy and rather colder from the wind being in the east, it was a fine spring day.
4th.—A most delightful day and starlit night; rather hazy after 10 P.M.
Temperature generally from 7° to 10° above that of the preceding week. The soil temperature at 1 foot, which on the 22nd was 36.4°, rose to 44.4° by April 1st.—G. J. SYMONS.

COVENT GARDEN MARKET.—APRIL 5.

The last few fine days have made the market more active, and goods have sold more freely. Strawberries are in excess of the demand, and will be till after Easter. Prices remain the same.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	dozen	0	0	0	Mulberries.....	lb.	0	0	0
Apricots.....	dozen	0	0	0	Nectarines.....	dozen	0	0	0
Cherries.....	lb.	0	0	0	Oranges.....	100	6	0	0
Cheshants.....	bushel	12	0	0	Peaches.....	dozen	0	0	0
Courants.....	1/2 sieve	0	0	0	Pears, kitchen.....	dozen	0	0	0
Black.....	do.	0	0	0	Peas, desert.....	dozen	8	12	0
Figs.....	dozen	0	0	0	Pine Apples.....	lb.	1	0	0
Filberts.....	lb.	0	0	0	Plums.....	1/2 sieve	0	0	0
Gooseberries.....	quart	0	0	0	Quinces.....	bushel	0	0	0
Grapes, hothouse.....	lb.	10	0	0	Raspberries.....	lb.	0	0	0
Lemons.....	100	6	12	0	Strawberries.....	oz.	0	6	1
Melons.....	each	0	0	0	Walnuts.....	bushel	4	0	0
					ditto.....	100	1	6	2

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	4	0	6	Leeks.....	bunch	0	4	0
Asparagus.....	100	6	0	0	Mushrooms.....	pottle	1	0	0
French.....	bundle	30	0	0	Mustard & Cress	punnet	0	2	0
Beans, Kidney.....	100	1	2	0	Onions.....	bushel	2	0	0
Beet, Red.....	dozen	1	6	0	Pickling.....	quart	0	6	0
Broccoli.....	dozen	0	1	0	Parley.....	dos. bunches	0	0	0
Cauliflower.....	1/2 sieve	2	0	0	Parsnips.....	dozen	0	0	0
Cabbage.....	dozen	1	0	0	Peas.....	quart	0	0	0
Carrots.....	bunch	0	4	0	Potatoes.....	bushel	2	6	0
Caulicums.....	100	1	6	0	Kidney.....	do.	0	0	0
Cauliflower.....	dozen	1	0	0	New.....	lb.	0	9	0
Celery.....	bundle	1	6	0	Radishes.....	dos. bunches	1	0	0
Colewort.....	dos. bunches	2	0	0	Rhubarb.....	bundle	0	6	0
Cumbers.....	each	0	1	0	Salsify.....	bundle	0	9	0
Endive.....	dozen	1	0	0	Scorzonera.....	bundle	1	0	0
Fennel.....	bunch	0	2	0	Seakale.....	basket	1	6	0
Garlic.....	lb.	0	6	0	Shallots.....	lb.	0	8	0
Herbs.....	bunch	0	2	0	Spinach.....	bushel	4	6	0
Horseradish.....	bundle	4	0	0	Tomatoes.....	dozen	0	0	0
Lettuce.....	dozen	0	6	1	Turnips.....	bunch	0	4	0
French Cabbage.....	1	2	6	0	Vegetable Marrow.....	0	0	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	APRIL 18—19, 1878.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.		Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.		m.	s.	
18	TH	Royal Aquarium Show closes.	55.4	38.7	44.5	5	9	6	51	morn.	6	85	19	0	24		104
19	F	Good Friday.	59.0	36.4	47.2	5	7	6	53	0	57	7	17	30	0	9	105
20	S		59.8	37.6	48.7	5	5	6	55	1	49	8	13	21		after	106
21	SUN	EASTER SUNDAY.	59.2	36.8	47.7	5	8	6	56	2	27	9	18	(0	21	107
22	M	Bank Holiday.	59.5	36.1	47.8	5	1	6	58	2	54	10	32	28	0	85	108
23	Tu		60.8	36.8	48.1	4	59	7	0	3	15	11	49	24	0	49	109
24	W	Royal Horticultural Society—Fruit and Floral Com- [mittees at 11 A.M.]	60.8	34.9	47.6	4	57	7	2	3	30	12	6	25	1	2	110

From observations taken near London during forty-three years, the average day temperature of the week is 65.2°; and its night temperature 35.8°.

JOHN BROWN'S WINDOW GARDEN.



THERE is an old saying that "you never know what you can do till you try;" and as a boy have I heard it from my father's lips so often that at last I took no heed at all, and certainly then did not try to prove the truth of it. But it is to show how at last the old words came back to me and brought forth fruit, or rather flowers, that I now venture to bring this short sketch before you.

I am a labouring man, and ever since I can remember have lived in the village of Henbury near Bristol, earning regular wages, and altogether leading a happy life; my wife always having a clean house and a cheerful face to welcome me after work. Then came the long evenings when I could work in the garden, with poor Mary, our invalid daughter, lying on her bed by the window watching and giving directions for the dearly-loved flowers. But "every path hath its puddle," and at last we came to it. My old master died. Times were bad, I left Henbury and came to live in Bristol near the Hotwell Road, having procured work at the Quarries.

What a change it was from the fresh air of the country to the smoke and noise of the city! but being winter we did not seem to miss the garden so much at first; for where my wife is the inside of the house is sure to be comfortable. I can say from my heart that "a good wife is a blessing." But at last the spring-time came with all its freshness, even the sparrows seemed to get more lively. Then a wistful look came into Mary's eyes which I could not mistake. She was thinking of the garden and flowers at our old home; and though I missed it much, still I had the fresh air by the river and the Leigh Woods to look at on my way to and from work, while Mary could only lie on her bed by the window and watch what was going on in the narrow street where we lived. During one dinner-hour at the Quarry I was telling Jim Smith, a fellow workman, about her, and that there was no help for it. "Why, man," said he, "I suppose you have windows where you live?—have a garden there. I've had one for years. 'You never know what you can do till you try,' especially in that way." The old saying roused me up, and never before an afternoon went so slowly; I wanted to get home to talk with Mary about it.

The first thing I procured was some wood, and made a box the size of the window, then I nailed some dry fir cones, which I had collected, over the outside, and that box was ready; but it looked so pretty that I determined to make boxes for every window. One I covered with virgin cork, which I believe can be bought at all ironmongers for 2d. or 3d. the pound, and a few pounds will go a long way. Then another I covered with small knotted branches of trees; this was the most trouble, but fully repaid me. Of course all the boxes had holes at the bottom, as the flowers would die without drainage. But when these were made it was still too early to sow seeds, so I had to think what could be done next; and

Mary proposed hanging baskets and brackets for the side of the window. And fine fun we had over it all. I could not spare much money; but, as you have heard, "Necessity is the mother of invention," and it is wonderful what can be done with almost nothing. "To him that wills, ways are seldom wanting." I found an old blacking box, covered it with small fir cones, with wire at the four corners to hang it by. An old wooden bowl made another; then I twisted some rough wire into a basket shape, till at last Mary said, "Why, father, we shall never find room for them all!" "Then the neighbours shall have them; a few flowers on the sill may tempt them to clean their windows more."

In April I obtained some mould from a friend, mixed with a little manure which I had swept up from the roads, and filled the boxes. In the first box I sowed Nasturtiums at one end and at the other Convolvulus to twine up the string, which I had fastened on each side of the window; then a few seeds of Mignonette to smell sweet; cuttings of the variegated Ivy-leaved Geranium to hang over the side, with scarlet Geranium in the centre. And all the boxes were different: Canary plants at the sides, Fuchsias in the middle, or mixed Ten-week Stocks, which looked very bright. But the back window was my great success; for having a little court behind, and by taking up a couple of paving stones, there was room for a small bed below the window, and there I planted Kidney Beans—the Painted Lady is the prettiest, its flowers being scarlet and white; and when the Canariensis round the window mixed with it, I thought nothing could look prettier. Then when the Beans came—why, one day I picked as many as 6 lbs., and during the season 19. I was saying to my wife that I enjoyed eating them ten times more than if I had gone to the shop for them. "Why, of course, John, you have had all the trouble, and watched their growth from the first. It is like one's children; the trouble and anxiety only makes you love them the more, and if they turn out well at last it makes all the trouble a pleasure, and so with flowers."

Then I filled pots with earth, of course with some broken bits of crock at the bottom for drainage like I had put in the boxes, and planted Musk, Mignonette, or Nasturtium, and hung them up before the windows in the wire baskets, lined with dry moss to hide the pots, or stood them on the little brackets which I had made with pieces of wood covered with fir cones; the drooping plants are the best for this. My prettiest hanging basket was the wooden bowl, in which I planted the Ivy-leaved Geranium with Lobelia mixed. The neighbours could hardly believe their eyes. They said 'twas town and country close together—their houses were town and mine country; and then I would give a pot of flowers to encourage them to begin for themselves.

But neither summer nor flowers can last always, though some Asters planted later than the other seeds kept my window gay far into the autumn. Then I cleared out the boxes, taking a few cuttings I had saved from them into the house to keep during the winter. I then planted

bulbs—a few Crocuses, Snowdrops, Tulips, &c. Where the Kidney Beans had been I put first a row of Crocuses, a few Polyanthuses, a Christmas Rose, and some of the common Primroses. While in the house Mary had three beautiful double Hyacinths in glasses which Jim Smith had brought as a Christmas present.

This was my first year's experience of town gardening, though I afterwards succeeded just as well, not only giving pleasure to me, but doing, I humbly believe, good to many of my neighbours, keeping many a man at home during the evenings and giving him pleasant work to do there; while the wives, seeing such a bright outside to the house, felt that the inside must match.

My friends, only try for yourselves and find out the pleasure there is to be had watching the seeds come up and improve under your care, if it is only the little edging Stock planted between the stones round your house; but I am sure you will not stop there, and will be able to agree with me in the truth of my father's pet saying—"You never know what you can do till you try."—H. B. M.

ECONOMISING LABOUR—PROPAGATING FOR THE FLOWER GARDEN.

It may be said that everybody knows how to propagate bedding plants. Perhaps everybody does, but I have often noticed that it is the work which everybody knows how to do that nobody takes the trouble to do properly. For example, whoever knew a Potato to be cooked well in a plain way where there is a professional cook kept? "That which is worth doing at all is worth doing well," and this applies as much to putting in half a dozen Verbena cuttings as it does to growing Grapes and Pines. The slipshod manner of working is always expensive in the end and the least satisfactory.

At this time of the year when the work in every department is pressing, and more especially after such an unfavourable season for advancing outdoor work as we have just had, it seems at times utterly impossible to keep up with it, and some that is thought to be the least particular is apt to be hurried over. It would often be far better to leave it alone altogether.

I find a great assistance from the note-book and pencil. A walk round alone in early morning, or just before twilight in the evening, note-book in hand, is an immense aid, and does much towards economising the labour of the next day; and at this time of the year it is especially to be recommended, for the value of the work of a trained man now is not to be measured by the amount of his wages.

I have no time for further preface, but will say a little about propagating that which is the easiest to grow of all bedding plants—the Verbena. I find it best to take the cuttings for stock plants earlier than is usually done in summer, say the end of July or beginning of August, and then have them gradually and well hardened, giving them plenty of room and some good sound fibry loam to grow in, which will tend to keep them gently moving all the winter if the frost is merely excluded from them. The opposite method—and which I advise my readers to forsake if they are in the habit of practising it—is to put the cuttings in late in autumn when they are hard and mildewed, strike them in heat close together, and give them alternations of heat and drought on a dry shelf through the winter. I like Verbena cuttings to be almost as strong as young nettles, which they will be if grown as I recommend. Mine are kept in boxes; the soil in bulk keeps of a more even temperature and a more regular moisture.

In the spring the plants are potted singly and placed, if possible, in a pit where is fermenting material, and they very soon furnish cuttings by the thousand. I have cutting boxes all of one size and 4 inches deep, with panes of glass out to fit on the tops. The glass may be in two, three, or more pieces, but it must fit closely. A number of boxes are half filled with fine loamy soil; neither crocks nor sand are wanted. Placing the first would be wasting time, and the latter would impoverish the soil. The boxes are prepared in the potting shed and taken to any warm house where there is a little spare room on the path, or elsewhere in the light, but out of the reach of the sun. After the soil is sufficiently warm the cuttings are dibbled in about 2 inches apart, watered, and covered with the glass, and they need no more looking to till they are rooted. The soil is 2 inches deep; it holds sufficient moisture for them till the cuttings are struck, and the sun cannot reach them to make them flag.

If there is a shadow of an insect on them a few laurel leaves should be bruised and placed under the glass with them, or a piece of common tobacco paper will answer the same purpose.

Where a large quantity of cuttings have to be shaded, and a number of houses ventilated immediately on the sudden appearance of the sun, by one man or boy—and this often happens in the largest establishments, as at meal times and non-working days—it is impossible to attend to all in the nick of time; and though it may appear to some people unnecessary to describe these details, I am convinced that my success principally arises from attending carefully to such little matters.

When the cuttings are struck, if there is room for them for a day or two in a dung frame, they are removed thither, never lifting the panes of glass till they are safely in their new home. They will strengthen considerably in two or three days, and then when room and time permit they are potted singly and again kept close for a few days. But as they are 2 inches apart in the cutting boxes, and have 2 inches of good soil to grow in, they will take no harm there for a week or two; but then they must be partially hardened-off, or they would quickly become full of roots and stunted. If such a thing should happen, throw them away and start afresh. A Verbena is of no use if it will not cover a foot of ground before July is out. If it is once stunted it will never do this; and about the month of August, instead of finding your beds covered with flowers, they will be covered with mildew.

I like, if possible, to pot all my young plants singly, give them a week in a dung frame, gradually harden, and then turn them out of their pots and plant rather closely together in a temporary frame, to be covered when necessary with thatched hurdles or shutters, where they remain till they are lifted to the beds. Sometimes press of work compels me to plant some out in the frames without previous potting, but then the roots ramble more; and although many of the plants lift tolerably well, they do not all do so, and they do not fill the beds so regularly. The pots are used several times over in a season.—WILLIAM TAYLOR.

COLOUR OF THE HYDRANGEA'S FLOWERS.

DURING August, 1874, I visited Penmanmawr, North Wales, and both there and in the surrounding district found the blue Hydrangea to be just as common as the pink in other districts. Some of these were most pleasing and attractive objects. On one specimen growing in a cottage garden I counted over eighty heads of bloom. This plant I should say, speaking from memory, was at least 4 feet in diameter, and the effect produced by the beautiful blue made me determine to secure such gems for my own garden if possible, so I found out a gardener and obtained a dozen good cuttings to take home.

A few days after when visiting the Pars of Aberglaelyn I came across another exquisite blue-flowered plant. The owner lived in a cottage, and could not understand English, and I could not speak Welsh, yet I had set my heart on having a fair supply of cuttings from her plant; so, although neither could understand the language of the other, when I took out my large-bladed knife, and went up to her plant and took hold of the branches I wanted with one hand, and showed her a shilling with the other, we promptly understood one another, and I obtained as many cuttings as I needed.

Those cuttings I took home, struck them in yellow loam; but every one of them came with pink flowers. I noticed the soil in which the blue flowers generally grew was very yellow, as though strongly impregnated with iron. By a qualitative analysis the soil in which the plants grew was found to contain silica, iron carbonate, alumina, calcium carbonate, magnesium carbonate. The order in which the constituents of the soil are enumerated is also indicative of their bulk, the largest being placed first. I should be extremely glad of any information which will enable me to produce with a moderate degree of certainty blue-flowered Hydrangeas; but hitherto neither alum nor iron filings mixed with the soil has proved of any avail.—H. ASHWELL.

THE ARRANGEMENTS OF COLOURS

IN THE BEDS OF THE LONDON PARKS AND GARDENS.—No. 12.

THE beds now figured are designed for angles at the junction of two walks. The filling-up of plain angles on grass with beds so as to please the eye is seldom performed to satisfaction, and consequently in such situations it is common to meet with

circles, ovals, and squares, which are never so pleasing as graceful and curved figures would be in the same position. The following beds will produce a good effect in the situation alluded to, and will form companion beds to simple as well as more elaborate beds laid down on other parts of the lawn.

BED U.

1. *Mesembryanthemum cordifolium variegata*.
2. *Lobelia Blue King*.
3. *Lobelia Omen*, rosy purple.—This is certainly a pretty and distinct variety, of dwarf habit, and a free bloomer. It has been used in Kensington Gardens, Hyde Park, Green Park, also in the squares at the Houses of Parliament, and in each place it gave the greatest satisfaction.
4. *Alternanthera amena spectabilis*.
5. *Iresine Lindeni*.
6. *Golden Pyrethrum*.
7. *Sempervivum arachnoidum*.—This is one of the most interesting of the whole family. It is admirably adapted for edging purposes, the plant being covered with a dense white web, which makes it one of the most conspicuous of this section. It is quite hardy, and will thrive in the hottest situation where there is hardly sufficient soil to nourish any other plant. It is increased by offshoots, which grow rapidly.

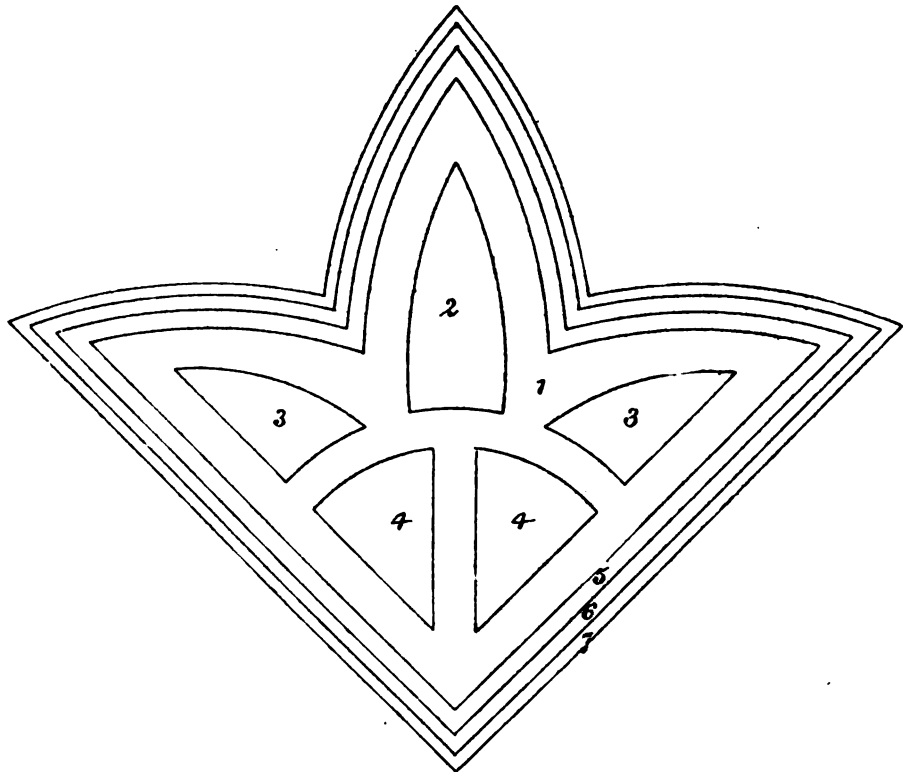


Fig. 81.—BED U.

BED V.

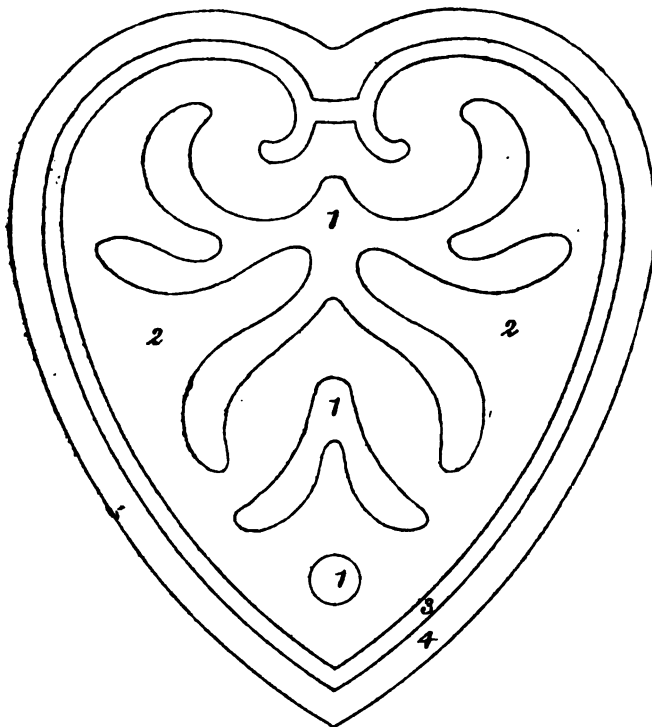


Fig. 82.—BED V.

1. *Iresine Lindeni*.
2. *Achillea umbellata*.—Dwarf and compact, of a bluish white colour. It forms one of the most charming carpets for

also a good edging. It only wants to be known to be more appreciated. Three years ago I had only three little plants, and I have now three thousand. I believe it is quite hardy, but I keep my plants through the winter in a cold frame. I increase my stock by divisions and cuttings in August; I divide the plant up in small pieces with a little bit of root to each, and pot them. The root will soon fill the pot, and the foliage soon cover its surface. To increase by cuttings, which is done in spring, I first place a few pots in a gentle heat and draw out the cuttings, as we gardeners call it, and the shoots that are made in heat will also root freely in heat.

3. *Lychnis viscaria aurea*.—Generally known as Creeping Jenny, Moneywort, and several other names. A bright golden yellow colour, and very constant in colour. Not a green leaf have I seen upon this plant.

4. *Senecio argenteus*.—This is without a doubt one of the finest hardy white-foliage plants in cultivation, and one that can be successfully grown in any ordinary border; but it thrives best when planted in beds or borders in good loam mixed with plenty of stones, as in its wild state it is found growing among the loose stones and debris which have fallen down the Alpine mountain. It is very silvery and attractive.—N. COLE.

ROSES ON THEIR OWN ROOTS.

Being a great lover of Roses, I have read with interest the articles which have appeared from time to time in your Journal both in favour of and against growing Roses on their own roots. I see at page 238 that Mr. J. Poyall recommends Roses on their own roots very highly for pot culture. Having had a few years' experience in forced Roses, I find that those on their own roots are far superior to Roses worked on either the Briar or Manetti for substance of flowers, richness of odour, and durability of the plants. I insert my cuttings in October in thumb pots, and by the

end of April or beginning of May they are all well rooted, when those for pot culture may be shifted into 5-inch pots, plunged in coal ashes outside or in pits, where they may be covered with ashes to keep off the heavy rains, always observing to keep them well pinched. I take them into a cool greenhouse about the 1st of November, and about the 1st of January they are removed into warmer quarters where the thermometer ranges from 50° to 55°, they being well supplied at this stage with liquid manure, and I am generally rewarded with five or six very fine Roses from each plant by the end of March. Those for outdoor cultivation I place in nursery lines, keeping them well pinched all summer, and they are strong bushy plants by the following spring, when they may be planted in their permanent quarters, and they will repay the grower for all the trouble he has had with them.

I see on page 230 that the Rev. John B. M. Camm denounces Roses on their own roots as worthless. Mr. Camm admits that a few of the older sorts will do well, but says as a rule the flowers are weak, thin, and altogether second-rate. In my experience I find them as a rule far superior to Roses wrought on the Briar or Manetti. I planted a few of my Hybrid Perpetual October cuttings in June of last year, they being put into the cutting pots eight months previous to planting. I allowed one flower to grow on each plant, and I am confident Mr. Camm would have been delighted with such flowers, even upon his favourite Manetti. I would advise him to give Roses on their own roots as good a trial as he has given the Briar, and I am of opinion that the result will be far more satisfactory, and not half the labour or expense will be incurred.

I may state that for a few years back I have been eminently successful in the above mode of treatment, inasmuch that all visitors to the gardens have been greatly attracted by the splendour and abundance of the flowers, and, as I am not an exhibitor, I feel highly gratified in having the approval of my employers.—A CONSTANT READER, A. R. C.

ROYAL AQUARIUM SPRING SHOW.

APRIL 12TH.

FROM the first mooted of a "Summer and Winter Garden Society" in the heart of Westminster it was expected that horticultural exhibitions would have prominent place in the programme of attractions. The "natural instincts" of the public in this respect were appreciated by the Managers, who have provided for floral displays in an unusually liberal manner. The schedules of the several shows have been judiciously framed, and the prizes offered have been such as to induce the principal exhibitors to compete in the classes. The first of these shows has been looked forward to with more than ordinary interest; firstly because of its being a new show, secondly because of the value of the prizes, and thirdly because of the reputation of the Floral Manager, Mr. Wills, and his skill in the arrangement of plants. Both good plants and artistic grouping were expected, and it is only fair to say that both are provided.

The plants are arranged on semicircular stages placed in the spaces between the permanent oblong beds, which are planted with Tree Ferns, &c. These stages projected boldly forward, and, as seen in connection with the intervening Ferns have a picturesque effect. The best banks of plants are on the south or entrance side of the building, and their effect cannot be appreciated at the first glance. The groups extend to the eastern hall, which is completely and admirably furnished. The Exhibition is a successful one. In most instances the miscellaneous collections are associated with the plants exhibited in classes, and this arrangement, while adding greatly to the general effect, presents little or no inconvenience in judging. The finest example of arrangement is in front of Mr. Wills's floral stand. The back of this group consists of choice Palms, flanked with Roses in pots from Messrs. George Paul & Son, Cheshunt, and from Mr. Walker, Thame, Oxon. In the front of these plants, and at distances of 8 feet, are baskets 3 feet in diameter filled with magnificent blooms of *Maréchal Niel* and other choice Roses. The spaces between these baskets are occupied by small groups of *Isolepis gracilis*, from the back of which spring well-bloomed plants of the beautiful *Dendrobium Wardianum*. The front of the stage is finished by a margin of *Cyclamens* in three rows, comprising over a hundred plants. This large semicircular bank of plants affords one of the finest examples of effective arrangement that has probably ever been seen at a London show. It was greatly admired by all visitors. The group opposite to this and in front of Rimmel's perfume stand is appropriately occupied with Roses in pots, exhibited by Messrs. W. Paul & Sons, Waltham Cross. The Roses are in great variety and well bloomed; amongst them *Firebrand* is conspicuous, and a white seedling *Tea Rose* is worthy of special notice. With the Roses are associated *Ivies* in pots, the collection being finished by a broad margin of *Bicolor* and *Tricolor Pelargoniums*

in glowing colours. Near the other end of the hall the groups consist, on the south side, of an attractive collection from Mr. B. S. Williams, Holloway, comprising Palms, Ferns, *Amarylids*, &c., margined with *Cyclamens*; the opposite group being composed of greenhouse plants and Azaleas from Mr. Wheeler and Mr. Turner, in the front of which are arranged the hardy *Primroses* and *Polyanthuses*. The other side banks are composed of Azaleas and *Cyclamens*, and one end of the hall is occupied with *Rhododendrons* and *Ochids*, and the other end with *Auriculas* and a brilliant collection of Gold and Silver *Pelargoniums* from Mr. Pestridge.

In the eastern or entrance hall the corner groups are composed of Azaleas; at the front of one group being the fruit and at the front of the other *Cyclamens*. The side groups in this hall being furnished by Messrs. Outbush & Sons, Highgate, principally with healthy and well-flowered *Camellias*, at the front of which are arranged the collections of hardy herbaceous plants, and Messrs. Rolleston & Sons, Tooting, who stage excellent Azaleas, Palms, and other ornamental-foliaged plants, and several choice *Ochids*, forming altogether a most attractive collection. At the extreme end of the hall Messrs. J. Standish and Co., Bagshot, stage splendid *Adiantums*, *farleyense* and *gracilimum*—very good *Cinerarias*, and the finest pots of *Lily of the Valley* that have been this year exhibited. Mr. Noble, Bagshot, also exhibit small and well-bloomed plants of the newest and best *Clematises*; and Mr. Bennett, Stapleford, small plants of *Tea Roses*—*Jean Ducher*, *Perle des Jardins*, and *Marie Guillot*—also a fine seedling Hybrid Perpetual, *Cleopatra*, large, full, smooth, and sweet. For the several miscellaneous collections noticed extra prizes were worthily awarded.

We will now glance at the classes. In the *Rhododendron* classes Mr. Child, gardener to Mrs. Torr, Garbrand Hall, is the only exhibitor. He staged good plants of *Veitchianum*, *Everestianum*, *purpurea elegans*, and *Brayanum*, and rather leggy specimens of *Countess of Haddington* and *Princess Alice*, and received the first prize.

For six *Ochids* (amateurs), the prizes were £8, £6, and £4, and the winners are Mr. Ward, gardener to T. G. Williams, Esq., Leyton; Mr. Douglas, gardener to F. Whitburn, Esq., Loxford Hall; and Mr. Child, gardener to Mrs. Torr, Garbrand Hall, in the order named. Mr. Ward's plants comprise *Odontoglossum Pescatorei* and *Bluntii*, *Dendrobium Farmeri*, *Lycaste Skinneri*, *Trichopilia crispata*, and *Cypripedium villosum*. Mr. Douglas has *Vanda suavis Veitchii*; *Odontoglossum gloriosum*, *crispum*, and *triumphans*; *Dendrobium clavatum*, and *Cypripedium villosum*, all fresh and good. Mr. Child's best plants are *Oncidium ampliatum majus* and *Saccolabium guttatum*. In the nurserymen's class for the same number of plants Mr. B. S. Williams is the only exhibitor, and worthily had the first prize for *Vandas tricolor* and *suavis*, *Dendrobium densiflorum* and *Wardianum*, *Lycaste Harrisonis*, and *Cypripedium villosum*, all in excellent order. An extra prize was awarded to Mr. Ratty, gardener to R. Thornton, Esq., The Hoo, Sydenham, for a splendid plant, nearly 4 feet in diameter, of *Dendrobium densiflorum*.

In the amateurs' class for six Azaleas Mr. J. Ward, gardener to G. F. Watkins, Esq., Leyton, has the first prize for large globular-shaped plants in excellent health and bloom; Mr. Child, Garbrand Hall, being placed second for pyramids of fair quality; and Mr. Ratty, Sydenham Hill, third for irregular-sized plants. For twenty standard Azaleas the £12-prize was won by Mr. Ratty, gardener to R. Thornton, Esq., The Hoo, Sydenham Hill. The plants were densely bloomed, varying in length of stems from 1 to 3 feet, the heads averaging 8 feet in diameter. Mr. O. Turner, Slough, was placed second with standard-Rose-like plants on 3 to 4-foot stems, and massively-bloomed heads. This collection contained the best varieties in the Exhibition, and were the purest standards. *François Devos* (fine double scarlet), *La Superbe*, *Pelargoniflora*, *Reine des Pays Bas*, *Reine des Roses*, and *Souvenir du Prince Albert* were especially striking. In the open class for nine greenhouse Azaleas in 12-inch pots, £5, £4, and £2 were offered. Mr. B. S. Williams, Holloway, being placed first with well-bloomed dwarf plants in good varieties; second Mr. C. Turner, Slough, for medium-sized well-bloomed standard plants.

For fifty plants (open), of *Cyclamen persicum*, the premier prize (£12), was won by the premier grower, Mr. Goddard, gardener to H. Little, Esq., Cambridge Park, Twickenham, for highly finished plants. Mr. R. Clarke, Florist, Twickenham, being placed second for larger and also good plants; Mr. James, Redless, being third; Mr. Odell, Florist, Hillington, being commended. In the nurserymen's class for twenty-five plants, prizes of £8, £5, and £3 were offered, the winners being Mr. Edmonds, Hayes Nursery, Middlesex; Mr. H. B. Smith, Ealing Dean Nursery; and Mr. R. Clarke, Twickenham, in the order named. The collections being all good. Mr. Hayes also exhibited a basket of plants with very large blooms. In the corresponding class for amateurs of the same number of plants, and for prizes of the same value, Mr. Goddard was far ahead of other competitors, winning the first prize with grand plants; the second

prize going to Mr. James, Redlees, Isleworth. Than the Cyclamens no collections of plants in the Exhibition are more effective, and these plants have probably never been staged so well and in such great numbers before.

In the nurserymen's class for nine Cinerarias Messrs. Dobson and Sons, Isleworth, are the only exhibitors, and were awarded a second prize. In the amateurs' class for six plants the first honours went to Mr. James, gardener to W. F. Watson, Esq., Redlees, Isleworth, for splendid dwarf plants with perfect blooms of Crown Prince, Ann Page, Purple Gem, Her Majesty, Thomas Lookland, and Mr. Childs; a third prize being awarded to Mr. Hepper, gardener to C. O. Ledward, Esq., The Elms, Acton, for large seedling plants.

For twenty-four hardy spring flowers in pots, not less than twelve kinds, £10 was offered in three prizes. The first award (£5) being won by Mr. Robert Parker, Exotic Nursery, Tooting, who had large plants; Mr. R. Dean being second with a smaller but bright collection; and Mr. Henry Hooper, Bath, third. These plants are very effective. For twelve hardy Primroses in pots Mr. R. Dean is the only exhibitor, and was deservedly awarded the first prize. Mr. Dean also staged a basket of seedling Polyanthus, the best we have seen exhibited this year, the plants being healthy, flowers fine, and colours rich and varied. In the class for twelve hardy Polyanthus Mr. R. Dean, Ealing, is placed first with an effective collection of well-grown plants, and comprising varieties of great usefulness; Mr. Petridge, Boston Road, Brentford, being placed second for compact plants in laced varieties, Mr. Turner, Slough, having the third place. Mr. Douglas exhibited a miscellaneous group of Primula amena in variety, and Mr. Henry Hooper excellent Pansies.

Auriculas are well exhibited, but we can only now say that in the open class for twelve Alpines Mr. Turner, Slough, is placed first; Mr. Douglas, Loxford, second; Mr. James, Redlees, third; and Mr. R. Dean commended. For twelve show Auriculas Mr. Turner is again placed first, Mr. Douglas second, and Mr. James third. For fifty Show and Alpine Auriculas Mr. Douglas won the first honours with a fine collection; Mr. Turner being placed second, and Mr. James third.

Violets are not superior. The first prize for six pots went to Mr. Ward, gardener, Longford Castle, Salisbury, and second to Mrs. Torr, Garbrand Hall; both collections being Neapolitans potted from frames.

FRUIT.—For two bunches of Black Grapes, old or new, Mr. Sage, gardener to Earl Brownlow, Ashridge Park, is placed first for Black Alicante; Mr. Allward, gardener to T. G. Barclay, Esq., Lower Woodside, Hatfield, second with Lady Dowae's; and Mr. Folkes, gardener to T. F. Halsey, Esq., M.P., Gadesden Park, Hemel Hempstead, third. An extra prize was also awarded to Mr. Hill, gardener to Rev. W. Sneyd, Keele Hall, for Black Alicante. The above are all old Grapes. Extra prizes were awarded to Mr. Hepper, gardener to C. O. Ledward, Esq., Acton, for new Black Grapes, well coloured and in good condition. For White Grapes Mr. Miles, gardener to Lord Carrington, is the only exhibitor, and was awarded a second prize for new Grapes. For fifty Strawberries Mr. Sage is first with splendid highly-coloured fruits of Sir J. Paxton; Mr. Ward, gardener to the Earl of Radnor, Longford Castle, being second with a mixed collection; and Mr. Phillips, gardener to A. Moss, Esq., Chadwell, third.

In this department of the Exhibition by far the most noteworthy collection is supplied by Messrs. Webber & Co., fruiterers, Covent Garden, who stage twelve Smooth Cayenne Pines, many of them weighing 8 lbs., and altogether most perfect fruit, being fresh, bright, and plump, and with small crowns. This collection elicited the remark from many growers, "We may give up growing Pines in England when such fruit as this can be brought from St. Michael's."

For the best brace of Cucumbers Mr. E. Cherry, gardener to E. R. Slee, Esq., Streatham, was placed first; Mr. R. Bates, gardener to E. Moore, Esq., Appleby Hall, Abberstone, second; and Mr. Rapley, gardener to R. Hudson, Esq., Olapham Common, third.

For fifty heads of Asparagus Mr. James, Redlees, is the only exhibitor, and receives the first prize for excellent heads.

The Exhibition continues open to the public until 10 p.m. this (Thursday) evening.

ONIONS AND THEIR CULTURE.

UNDER the above heading a correspondent, "R. FISH'S PUPP," has contributed some useful and seasonable notes. He has not, however, enumerated all the modes of growing Onions, and respecting one very old plan I will submit an extract from a letter which was written by Sir John Swinburne, Bart., F.H.S., more than half a century ago. The mode was communicated to Sir John by Mr. Falla of Newcastle, and is thus described:—"The practice of the market gardeners at Hexham in Northumberland in raising Onions, for which article they are very celebrated, so contrary to received opinion

and practice in both agriculture and horticulture, is as follows. They sow their Onion seed on the same ground for twenty or more years in succession, but annually manuring the soil. After digging and levelling the ground, the manure, in a very rotten state, is spread upon it, the Onion seed sown upon the manure, and covered with earth from the alleys, and the crops are abundant and excellent in quality."

I wish to add that this old plan is as good as ever, for I have seen it carried out extensively, and have also practised it with the best results. Where the soil is light and the Onion maggot troublesome I am not aware that a better plan of raising a good crop can be adopted than the spreading of 8 inches of rich but decayed manure on the surface, and on this place an inch of soil, sowing the seed in drills in the usual way, or if the manure is not too wet the seed may be sown as above described. This plan is frequently adopted by cottagers in many parts of the country, and they seldom fail in having good Onion beds. By this mode the Onions have what they require—a rich medium, which induces a quick early growth, and the firmness of the ground facilitates their forming, if not large, yet clean, sound, and handsome bulbs. I do not, however, consider it essential that the crop be grown on the same ground every year, but that it can be so grown is no small testimony to the usefulness of this old plan, which I submit as worthy of notice.—A SCHOOLMASTER.

ROYAL HORTICULTURAL SOCIETY.

WE are glad to be able to announce that the financial difficulties under which the Royal Horticultural Society has been labouring so long are at an end. By an arrangement with Her Majesty's Commissioners the sum of £5000 has been made over to the Society on the security of the Commissioners, and by the end of this week every debt owing by the Society on the 31st December last will be paid, including prizes, medals, and tradesmen's bills of every kind. It is to be hoped that this new state of things will encourage many to become Fellows who have been holding aloof because of some personal responsibility they were supposed to incur.

NOTES AND GLEANINGS.

ROYAL HORTICULTURAL SOCIETY, SOUTH KENSINGTON.—At a General Meeting of the Society held on the 5th of April, G. F. Wilson, Esq., F.R.S., in the chair, the following candidates were duly elected Fellows:—William Barber, Worsley Battersby, D. A. Carnegie, M.D., W. T. Cavendish, W. H. Oullingford, Miss A. Derriman, Alfred M. Drummond, Col. C. Elliott, C.B., Miss C. A. Ellison, Henry Ellison, W. F. Elrington, Mrs. Clayton Freeling, J. Gardiner, Viscountess Glentworth, Mrs. Gordon, Rear-Admiral Kennedy, C.B., A. Lichtenstadt, Sir George Macleay, Mrs. M. E. Milroy, Mrs. Partington, H. W. Ripley, M.P., Hon. H. Dudley Ryder, James Stern, Mrs. F. S. Teesdale, Mrs. Whigham, Lady Simmons. The following *bona fide* gardeners were also elected:—J. George, Putney Heath; Robert Laing, Fursdow, Tooting; W. Taylor, Longleat, Warminster; Mr. Smith, Dover House, Roehampton.

FROM various districts we have hopeful accounts of the FRUIT PROSPECTS of the year. They may be generally summarised thus: The early Apricot blossom where unprotected has been destroyed by the severe frosts of March, but in most cases a sufficient number of late blossoms have opened to insure fair crops of fruit. Peach and Nectarine trees are also similarly spoken of. The blossoming of the hardier fruits of Pears, Plums, Apples, and Cherries is much more profuse than had been anticipated considering the heavy crops of last year, and if the favourable weather which has set in continues to prevail a good "fruit year" may be expected.

WE are informed that the able cultivator of Auriculas, the Rev. F. D. Horner of Kirkby Malsseard, Bpton, has succeeded in raising a YELLOW SELF AURICULA of high quality, and a great advance on other varieties of this colour, especially in the more perfect outline of the flowers and the smoothness and substance of the petals. It is remarkable that this promising yellow flower is a seedling from a green-edged variety.—Charles E. Brown.

ANTIGONON LEPTOPUS is one of the finest climbers of the West Indies and some parts of America, but in this country it has been found extremely difficult to induce it to flower. It was introduced to Kew some years ago, and was distributed to nearly all the chief nurserymen, none of whom,

so far as known, have yet succeeded in blooming it—in fact, a great number have discarded its culture. At Kew it bloomed in October of 1869, and a figure was published in the "Botanical Magazine" of the following January. The only other instance occurred in a private collection last autumn. In both cases it grew close to the glass, and this may have favoured the condition of growth necessary to produce flowers. It may also be that the stems were allowed to run their own way. Climbers for convenience are often confined on sticks or other contrivances, but which is not conducive to vigour. This we have seen trained on balloons from its being of slender habit. It is a physiological aphorism "that the more erect a stem grows the more vigorous it is; and the more it deviates from this direction to a horizontal or pendulous position the less is it vigorous." Climbers and creepers of course do not always require to grow erect, and for these the above aphorism need not be taken in a literal sense, but rightly considered it seems to have application in this case as opposed to artificial restriction. So beautiful a plant would be highly valued if a sure method could be found for causing it to bloom. In the stove it grows well without trouble, and a mixture of peat and loam in equal parts, with an addition of sand, seems to suit its requirements. It has wiry stems, with thin heart-shaped leaves, and racemes of bright rose-coloured flowers. It belongs to the Polygonaceæ, but is entirely without the coarseness usually associated with the order.

— THE small plants of *TOXICOPHLEA SPECTABILIS*, recently exhibited at South Kensington by Mr. B. S. Williams prove how valuable is this stove evergreen for decorative purposes. The corymbs of pure white flowers were produced from every axil of the leaves, forming an effective contrast with the rich green foliage. A valuable addition to the chaste appearance of this plant is the delicious fragrance of the flowers. This plant is of easy cultivation, growing freely in loam and peat, and requires the temperature of a cool stove or intermediate house.

— MR. CHRISTIE, gardener, Orton Hall, Peterborough, states that he has cut nineteen dozens of *MARÉCHAL NEIL* ROSES from one shrub planted out in a large house which has been converted into a stove, and the heat has brought out the Roses not only early but exceedingly fine. Several other buds are showing on the plant.

— WE have recently seen in the gardens of H. Chaplin, Esq., of Blankney Hall, a NEW BEET not only perfectly distinct from but decidedly superior to any other variety which has come under our notice. It has been selected by Mr. Friaby, the gardener, from Nutting's Dwarf Red Beet, but is as dissimilar to the type as is the Early Horn to the Long Surrey Carrot. In shape this Beet is precisely that of a perfectly formed Carrot, the root being the reverse of short and stubby so common in Beets, but is narrow, long, and gently tapering. A full-sized root in its thickest part is not larger in diameter than a fair-sized Cucumber, and this diameter is very nearly maintained to a length of 9 inches. In other words, three times the number of slices can be cut from a root of this Beet than from one of the variety from which it has been selected. There is little if any doubt that this is the most perfectly shaped Beet at present in cultivation, and in colour and quality it is all that can be desired. It is an important addition to our root crops, and is calculated to drive most of the ordinary types of Beet out of the market and garden. It has also proved to be perfectly constant and fixed in its character.

— THE horticultural decorative establishment of Mr. WILLS at OSWOLD CRESCENT is at present unusually attractive. The Palms, Tree Ferns, towering Dracenas, and other ornamental-foliaged plants are not only numerous but exceedingly fine. The flowering plants are in great variety, and are arranged in various and tasteful ways and attractive groups. The miniature aquariums with their canopies of cork whereon are trailing plants and mosses demonstrate how ornamental such contrivances are for rooms and conservatories; and prominent objects in the open air are handsome standard Laurustinuses. These have stems 8 to 5 feet in height, surmounted with globular heads 3 feet in diameter densely covered with flowers. For terrace ornamentation it is difficult to imagine anything more imposing at this period of the year than these hardy standard Laurustinuses.

— MESSRS. W. & J. C. CASSON, Thorne, near Doncaster, inform us that *RHODODENDRON CAUCASIACUM* *Mnemosyne* grandiflorum has stood hooded out fully exposed all the winter and during the severe frost and snow in March, yet it is now splendidly

in flower. The plant is only 18 inches high, and has twenty-three trusses of flowers expanded. The outside of the petals are a bright rose lake with fringed edges; the inside of the flowers are nearly white, each being about 2 inches in diameter. As the trusses are large in proportion to the size of the plant, and the foliage good, it is just now a very beautiful object.

— SOME idea of the recent TORNADO that passed over France may be gathered from the fact that no fewer than 80,000 trees were blown down in the forest of Compiègne, a part of which belongs to the Duc d'Anjou. Gaps 500 yards wide and 1000 yards long have been made in the old forest. The damage is estimated at over a million francs. In many parts of Normandy a third of the Apple trees have been destroyed, and the damage will take years to repair.

— THE approaching INTERNATIONAL HORTICULTURAL EXHIBITION to be held at Brussels is expected to be one of the most successful gatherings of the kind on record. The arrangements of the Committee have been on the most liberal scale, and the inducements offered to English exhibitors have been such as to command attention. We are informed that most of our principal nurserymen have applied for space at the Exhibition. The order of proceedings is arranged as follows:—Friday, April 29th, at 9 P.M., official reception of the members of the Jury and of the Botanical Congress in the hall of the Hôtel de Ville, when the *vin d'honneur* will be offered by the Burgomaster. Saturday, April 30th, 9.30 A.M., meeting of the Jury at the exhibition in the Plan du Petit Sablon. In the evening, meeting at the Cercle Artistique. Sunday, at noon, formal opening of the Exhibition; spectacle at the Théâtre de la Monnaie. Monday, May 1st, at 10 A.M., opening of the Congress; at 6 P.M., grand banquet offered by the Flora Society to the members of the Jury and the Congress. Tuesday, continuation of the Congress. Than a visit to this Exhibition we know nothing of greater interest to horticulturists and gardeners, who may rely not only on a great horticultural treat but on receiving a warm welcome by our Belgian friends.

— FLOWER GARDENS IN CHURCHYARDS. — Dr. Tristram, Chancellor of the diocese of London, has lately given his decision respecting the application by the Rev. Harry Jones, rector of St. George's in the East, and the churchwardens, for a faculty to convert a part of the churchyard (which was closed in 1855) into a flower garden. He said that all parties agreed in the application, and the Court had jurisdiction to make an order which would give access; and it could not confer on the parishioners any greater power. If the Court sanctioned the ground being planted with flowers it would be doing nothing that could be construed as desecrating the ground or offering any disrespect to the dead. In granting the application for a faculty he considered he was exercising a sound discretion, having regard to the times and circumstances and the interest of all parties concerned.

JOTTINGS ABOUT ROSES.

ON page 247 of our Journal, "WINCHMORE" suggests that my great failure with the Briar last year was owing to the enormous amount of manure that I used with them. Now I cannot think this, for in the first place it is exceedingly difficult to over-manure the Briar, although, as I myself have proved, you may over-dress the Manetti; and secondly, I did not, as "WINCHMORE" may possibly imagine, place the whole of the manure on at the same time. I covered the land with manure first in the summer, and then ploughed it in. I next planted the Briars in the winter and top-dressed them in the spring, budded them in July and manured them again in the following winter, and mulched them again in the spring. So there were four distinct dressings. As for draining, our soil is so light and stony that it is never required. "WINCHMORE" concludes by having a shy at my peroration.

ABOUT the *Osmunda regalis* "WINCHMORE" says, "The *Osmunda regalis* needs little protection with us, for in our unfavourable district you would be as likely to find an *Anthurium* or *Poinsettia*." I am very sorry to hear it, for here it grows in perfection; but if he wants a more homely ending let me implore him to leave the wild Rose to follow its own "sweet will," bloom in his hedges undisturbed; let it protect the honest Dandelion and screen the useful if vindictive Stinging Nettle, so will the herbalists and the dear old women of his native place cover him and it with blessings as they make their delicious medicine. Mayhap he will thereby be saved a doctor's bill, and all because of the dear Dog Rose.

With "A. C." (page 252) I cordially agree. I quite think it is far better to buy out-back Roses or one-year-old plants from the nurserymen, but as I wrote a letter to that effect last year it is unnecessary for me to say more on this head. I still maintain that as fine blooms can be cut (if not finer) from the Manetti as from the Briar. Of course everything depends upon the soil and the climate. It is impossible to lay down any fast and fixed rule on the subject; but the Manetti will flourish where the Briar will die, and the man who would have to despair of showing a good bloom in such a soil as mine can with confidence cultivate the Manetti.

Of the seedling Briar I know nothing except as a stock for Teas; but I should suppose that the same quality of soil would be required for it as for the common Briar. It is a wonderfully good stock for Teas, and I wish all mine were worked on it; but the good man who introduced it will laugh at you if you send an order for Teas alone. He told me last year at Oxford, when I humbly offered an order for Teas, "Not unless you take some Hybrid Perpetuals also;" for he added he could have sold five times the number of Teas last year if he had had them.

"A. C." (page 252), mentions the longevity of some standard Roses at Sevenoaks. It is quite possible that standards may live for a quarter of a century and bear numbers of flowers, but in all I write I regard the Rose as an exhibition flower, and I should much doubt whether such plants ever produced perfect flowers fit for the Rose shows. I think it will be granted that the maiden blooms and those from the year-old plants are alone, as a rule, fit for exhibition. You must either bud stocks or buy a certain number of plants every year if you mean to keep-up your form at the shows. But if you cannot afford to do this there is one expedient that you can adopt, and that is lifting the plants, pressing the roots, and planting them in fresh ground, either on a fresh site or in virgin soil wheeled into the old beds.

I have proved it, and my friend Mr. Baker will bear me out in this, as he made the above remark on observing some Teas bear last summer; and the great nurserymen will also endorse this dictum, for they never grow Roses in the same ground two years in succession. Travellers by the South-Western Railway as they near Salisbury will see Dahlias growing in Mr. Keynes's nursery where last year they saw standard Roses, and even vegetable crops often take the place of Manettis. Of course it is a hard matter to persuade your gardener to adopt this course of procedure, although he sees the system called "rotation of crops" carried on all around him. I had a regular set-to with my man this year. "Oh, I want that bed, sir, for airy 'taties, it is the warmest spot in the garden." "Yes, and you have had airy 'taties there ever since I came; give the soil a rest, and the 'taties a change." But I regret to say I was vanquished. Last of all, however, I did get the better of him. Some room had to be found for Roses this spring, and he had the alternative of digging a new bed on the lawn or yielding up a portion of the kitchen garden. He chose the latter, and now those Roses are where his "airy" Rhubarb and Seakale were last year, and the groans he gave vent to as he forked-up the Seakale roots are ever to be remembered by me.

There are foes, however, which dwarf Roses suffer from more than standards, although in Starvoore (the field which killed my ten thousand), even the latter suffered, and those foes are rabbits, and even rats. The former are most destructive to dwarfs. They come out at night and nip off the shoots just at the most critical stage of their growth, and the rats tear the rind. With regard to the devastation made by rats here it is most deplorable. I had a whole consignment of bulbs destroyed by them in my fruit-room. They are so bold that they climb up the Magnolia outside the house and try to get in at the nursery windows.—JOHN B. M. CAMM.

CHAPTERS ON INSECTS FOR GARDENERS.

No. 7.

EVERYONE of us, I suppose, forms his ideal of perfect happiness, not so much from books or descriptions as from his actual circumstances and surroundings; though these, too, are apt to lead him astray when he contemplates what he has never tried. Capt. Marryat thought, we know, that a thoroughly blissful state of being would be one in which no shadow of an editor or a publisher ever crossed the path of the brain-worker; and perhaps many a horticulturist conceives of a world of happiness as being one which is free alike from insect pests

and vegetable foes, so that, unimpeded by these, horticulture as a science may rise to heights unknown before. Yet here may be a fallacy: the struggles and alternations of a pursuit which has its hopes and its fears must really be better than a perpetuity of success. We have read of the general who was so often victorious that he positively longed to lose a battle and break the tameness of triumphing; and the occasional disappointments one meets with in the garden ought to encourage us to effort, since, I make no doubt, were it not for the necessity of watchfulness, some of us would become sadly careless. But as things are, if we do not keep a sharp look-out, our insect enemies are down upon us ere we are aware, and the "multitudinous hum," as somebody calls it, which our ears are familiar with just now, sounds a note of warning.

Much of this aerial music comes from the fly tribes, which we have at present under consideration; though, considered as an order, the Diptera are but "small potatoes" in the way of producing sounds compared with their boisterous four-winged brethren the Hymenoptera. The large section of the flies which entomologists distinguish by the name of Brachycera contains no less than seventeen families small and large, comprehending within it great varieties of figure and size; but all, or nearly all, the Brachycera, as compared with the gnats, crane-flies, and midges we recently noticed, exhibit a certain stoutness of figure. If the Nemocera are the light horsemen amongst the flies, the Brachycera represent the dragoons and heavy cavalry. In some of the families the antennæ are short, consisting of but three joints; in other families, where there are from three to ten, all beyond the third are extremely thin, or they lose their distinctness. In the first two families of this section we find that the pupa remains within the larva skin until the perfect fly appears; these being the Stratiomyidæ and the Xylophagidæ. Of the latter family it need only be said that it embraces but a small number of species, not abundant, most of the larvæ of which live in decayed wood. The more important family of the Stratiomyidæ includes some very showy flies, which may be regarded as doubtful friends of the garden. The soldier-flies of the genus Stratiomys haunt flowers, taking short rapid flights, and having aquatic larvæ, one species of which, producing the common chameleon fly, is frequently fished up by those in search of objects for the aquarium. No doubt these received the name of "soldier-flies" because of their gay colours arranged in spots and stripes; but they might also be so called because they occasionally attack and prey upon smaller flies. In the genus Sargus the flies display metallic tints, and there the larvæ are underground feeders, preferring vegetable food that is in a decaying condition and that is somewhat moist: hence in this and in two or three other genera the larvæ act as scavengers. It is also presumed that the flies of this family, like others akin to them, aid in the fertilisation of flowers by their transference of pollen from plant to plant.

Throughout the family of the Tabanidæ we have the singular circumstance that the females are ferocious bloodsuckers, while the mild masculines

"Gather honey all the day
From every opening flower."

Though this is hardly comprehensive enough, as these flies can digest pollen as well, and they are suspected of occasionally disfiguring the petals of flowers by biting them. The popular term "Breezezies" may suit both sexes, but only the females can claim the epithets of Horseflies, Oxflies, or Gad-flies. In some districts the cattle suffer severely from their attacks, and gardens in proximity to woods are occasionally the resort of Tabanidæ of both sexes. Poets have gone into enthusiastic fits over the eyes of gazelles, but I do not know that one has expatiated upon the eyes of a breezezy, though in many species these organs are beautifully lustrous and of varied tints, green and purple predominating. The history of the larvæ of this family has not been thoroughly investigated. Some few have been reared: these were wormlike in form, of course without feet, and with a head strengthened for the subterranean life they lead. Gardens do not appear to attract the flies to deposit their eggs, or they might be injurious to the horticulturist, since the larvæ probably feed on roots, varying their diet at times by preying on smaller creatures than themselves. These cast off the larva skin in assuming the pupal state, as do also the two families following.

Comical little fellows are the Acroceridæ, offering quite a contrast to the preceding family in size and shape. No naturalist having seen fit to attach an English name to them, it would be presumption on my part to do so. Though they

visit flowers in our garden beds, they do not seem enthusiastic in their devotion to them, and are very sluggish in their movements—apparently, one would say, a melancholic race, perhaps occasioned by their being somewhat pot-bellied. The abdomen, in fact, is almost globular, the thorax broad and convex, and the head so small that it seems to be contrived only to pack the eyes and mouth into it. On the whole, these small flies stand in a neutral position towards horticulture; but in the next family, the Asilidæ, the case is different, for the majority of the species are predaceous, some of these flies having actually the audacity to attack bees. A single Asilus will destroy a good number of smaller flies, since it usually only sucks the juices of its prey. *A. crabroniformis*, with its striking



Fig. 88.—*Asilus crabroniformis*.

yellow and black markings, is a familiar example of the family. It has been called the Hornet Fly from its resemblance to that insect. Mr. Wood thinks this fly has odd fancies about the dangers it incurs from man, as he observed that when one is started it rises with an irregular flight, and then pitches after flying a dozen yards, then remaining quite still unless disturbed again. But gardeners are not very likely to hunt the Asilidæ if they recognise them, since the flies are the reverse of harmful. The larvæ, it is true, feed beneath the earth or in decayed wood, yet they have not been reported upon as in any way injurious to cultivated plants, though they may affect pasture lands in conjunction with other grubs of the order Diptera. One author describes these flies as "long, strong, hairy, and hungry-looking;" but I suspect all these adjectives will not serve for identification, as they might apply to various species, and really it is difficult to ascertain whether a fly is strong merely by inspection of his outer fly. It is more to the point to add that when on the move the flies extend the proboscis in front of the head, which it about equals in length; the thorax is also narrowed towards the head. Only a few of the Asilidæ are bright-coloured, the rest exhibiting a grey or brown garb.

Closely allied to the Asilidæ in structure are the Leptidæ, with larvæ of similar habit; but the species generally are less predaceous, as the slighter "build" of the family would suggest, and we infer it as well from the much smaller footpads, these being large in the Asilidæ, which are frequently seizing other insects. There exist footpads, however, amongst the Leptidæ, still they can, it is presumed, manage to subsist entirely on flowers, yet they are not numerous or pertinacious enough to injure even delicate blossoms. *Leptis scolopacea* visits gardens nearly everywhere in England, and this is a fair representative of the family, with its greyish wings spotted and edged with brown, while the dull orange abdomen is black-

spotted, and the thorax is grey in the male, yellowish in the female. It is reported that the larva of one exotic species in this family, which resides in sand, contrives pitfalls in which it catches small insects, thus curiously resembling in habit the famous "Ant lion."

We pass on to the more important family of the Bombylidæ, which has received an English name. All the Bee-flies, however, are not noisy, though rapidity on the wing constitutes a general characteristic. In the genus *Bombylius* we have furry-looking flies, with short and thick bodies, fond of hovering over flowers in a way that has led some to compare them to the night-flying moths, which balance themselves above the summer blossoms with quivering wings, seeming as if suspended in the air. *B. major* and *medius* are well-known species, the former especially notable from its black body, thick with golden hairs above, and black and white below.



Fig. 84.—*Bombylius major*.

These flies are to be seen pausing as they go from flower to flower, apparently critical in their selection. They do not meddle with other insects. Throughout the family the body is rather short and stout, the outstretched proboscis quite equalling it in length. The wings of the Bombylidæ are at all times kept extended by the insects. One genus, *Thereva*, is suspected to have predaceous tendencies. The larvæ follow the habit I have referred to in several families—that is, they lead a subterranean life, seeking out for the most part, it is thought, enemies of the roots of plants, and therefore not strictly vegetarian, but rather beneficial as parasites.—C.

ANNESLEY HALL,

THE RESIDENCE OF JOHN CHAWORTH MUSTERS, ESQ.

ANNESLEY HALL is situated in a picturesque part of the county of Nottingham, and is more or less associated with the name of Byron. It is only two miles from Newstead, the birthplace of the great poet, and a little beyond the latter place eastward of Mansfield is Sherwood Forest, the home of the redoubtable Robin Hood, who lived in the latter part of the twelfth and early part of the thirteenth century. The Hall is a handsome and spacious mansion of great antiquity, and has been thoroughly restored by the present owner. Even as early as the Norman Conquest the manor was given to Ralph Fitz-Hubert, and was afterwards possessed for many generations by the Annesleys, whose heiress carried it by marriage to the Chaworths of Wiverton, whose last representative married the late John Musters, Esq., in the year 1805.

Half an hour's ride from Nottingham brings us to the pleasant village of Linby, intersected by the Nottingham and Mansfield railway. Here are to be found some old monastic ruins, which bear evidence of its having been a place of considerable religious importance several centuries ago, and probably either connected with the priory of Newstead or the one at Lenton near Nottingham. The ancient crosses at each end

of the village and the maypole in the centre carry the visitor back in imagination to times long gone by.

The entrance into Annesley Park from the Nottingham side is from the latter village, and the drive to the mansion is one of an imposing character. The park is about six hundred acres in extent, and is well stocked with deer and Scotch bullocks. The long avenue of trees through which we pass possess some rather singular associations, for formerly the trees were cut into the shape of dogs and bears, but they have long been allowed to grow in their natural shape: hence this drive is called "Dog and Bear Lane." The principal entrance to the Hall is through an archway into a large open courtyard, bounded on the north side by stables, carriage houses, and other outbuildings; the east by offices, laundry, dairy, game larder, &c.; and the south side is open to the park. The stable wall is covered with a fine sheet of Ivy, cut as trim and neat as the wall on which it is growing. In the centre of the courtyard is a large fountain, which with the other imposing ap-

pendages gives the place an aristocratic appearance. In close proximity to the Hall is an ancient little church. The sacred edifice is overshadowed by broad-spreading trees, which shed a solemn quietude over the spot where "the rude forefathers of the hamlet sleep." As we left the courtyard I noticed just in the boundary of the park two fine specimens of Fern-leaved Alders. From the front door round to the western side of the Hall is a broad border filled with spring-flowering plants in the ribbon fashion, consisting chiefly of Daisies, Crocuses, Polyanthus, Hepaticas, Stachys lanata, Aubrietia, Violas, and Pansies.

Ascending a flight of steps we reach the bowling-green; it was on this beautiful sward that Byron during his visits to Annesley used to practise pistol-shooting. Another double flight of steps brings us to the upper terrace, from which we obtain splendid views of the surrounding country. This spot is so associated with historic interest that it deserves more than a passing notice. As is seen in the engraving there is a

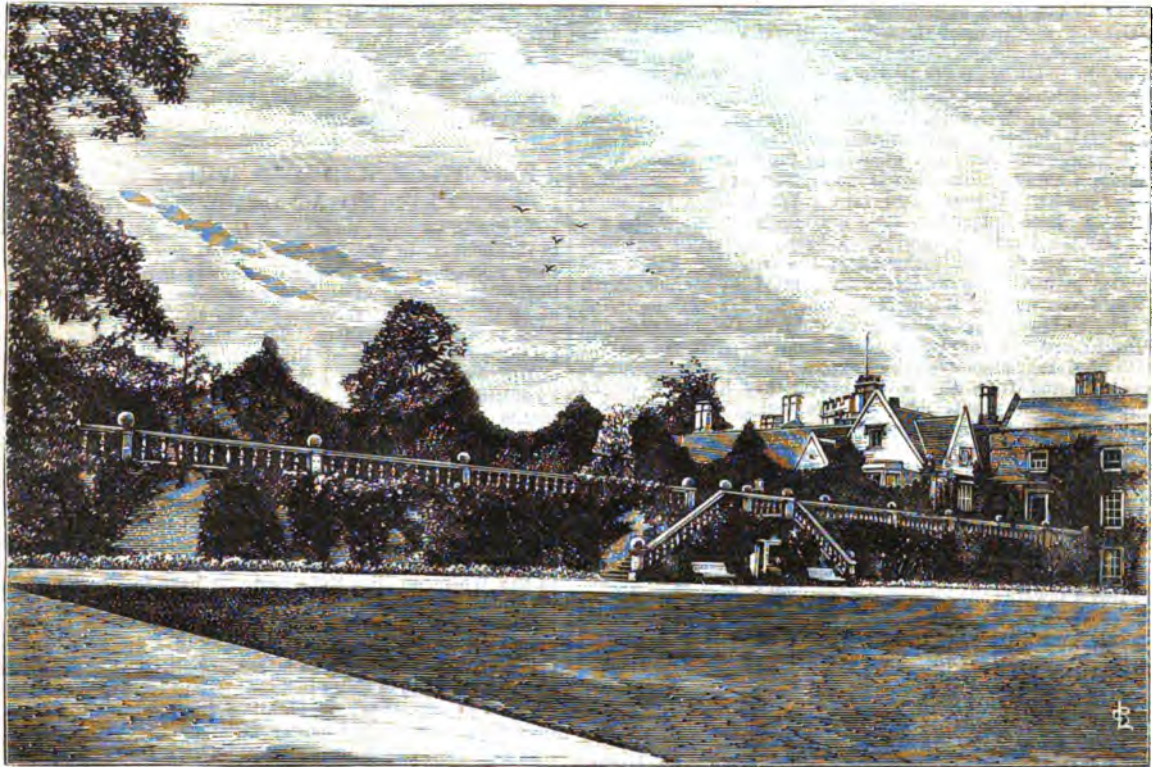


Fig. 85.—ANNESLEY HALL.

door in the wall between the flights of steps leading into a cellar underneath the terrace. This door was the great poet's favourite target, and the holes made by the bullets still remain. Some years ago, as it was fast falling to decay, when Mr. Young, the head gardener, had another door made and hung on the original hinges, and the old bullet-holed door fastened to it in order to preserve it to posterity.

Resuming our position on the upper terrace the distant landscape stretches before the eye like a charming panorama. In the distance rise majestically the hills of Mapperley, Bestwood Park, the seat of the Duke of St. Albans; and nearer Annesley is Hucknall Torkard, famed as being the last resting-place of Byron. As we contemplate the range of hills which lie before us we cannot help calling to mind those lines which have made the hills famous.

"Hills of Annesley, bleak and barren,
Where my thoughtless childhood stray'd;
Now the northern tempests warring,
Howl above the tufted shade.

"Now no more the hours beguiling,
Former favourite haunts I see;
Now no more my Mary smiling
Makes ye seem a heaven to me."

The front of the terrace is ornamented with quaint balustrading, and the wall on the opposite side the broad pavement

has the appearance of living festoons. At distances of about 12 feet there are projecting pillars built of the same material as the wall. These pillars are mounted with a broad cap and finally a round stone ball. Ivy is planted at the back of the wall, trained over these caps along the top of the wall, and falls in the centre like suspended chains. The effect produced by what I must call the "Ivy copings," for the want of a better name, is very pleasing. At each side of the pavement there are broad borders filled with spring-blooming plants, and by the time that these notes reach your readers will light up these ancient terraces with their simple beauty.

As we emerge from the terrace we pass down a large flight of steps, and leaving the Hall behind us we pass by beds of Rhododendrons, with some venerable Elms, Limes, and Sycamores in the rear. Numerous walks intersect the pleasure ground, and in places where the surface is considerably elevated the walks traverse through cuttings about 5 or 6 feet deep. Instead of the grass sloping down to the margin of the walks the sides are built up with rockwork with large cavities between the stones, in which are planted Aubrietias, Arabis, Iberis, and other gay spring flowers. As we pass along one of these walks every step is full of interest. Several very fine evergreens are in luxuriant health, such as Pinus excelsa, 70 feet round the extremity of its branches and 25 feet high;

Cedrus deodara, 70 in circumference and 25 feet high; a very fine *Wellingtonia*; also Cedar of Lebanon and *atlantica*, a fine pyramid of Hodger's hybrid Holly, *Thuja borealis*, and Hemlock Spruces. At the end of this walk we come to an open space from which other walks diverge in different directions. Here is planted in the centre a large *Wellingtonia* on a high mound, with a bordering of *Berberis aquifolia*. Down a number of steps in a secluded glen I noticed what formerly was the village well, and from it emerges a tiny stream which spread out between banks of Laurels and *Rhododendrons*, forming a miniature lake. The ground which now forms these beautiful shrubberies not long ago was the original village of Annealey, and some of the trees planted by our grandfathers have been taken advantage of, and with a judicious arrangement of their surroundings Mr. Young has brought them in as useful ornaments.

Turning to the left I just take a glance up one of the long glades close to the boundary of the park which forms the pinetum. Near the iron fence is a long line of Yews planted about 20 feet from each other. It is intended to allow the upper branches to meet and form a series of living arches. On the other side of the avenue Pinuses and other evergreens are in excellent health, perfect pyramids many of them, with the lower branches sweeping the ground. The most notable are *Pinus excelsa*, *P. cembra*, *P. nobilis*, Cedars of sorts, *Araucaria imbricata*, *Cupressus Lawsoniana*, and large Chinese Junipers.

Retracing our steps and passing by the before-named *Wellingtonia* along another rustic walk, we come to the spring flower garden. It is enclosed with a Yew hedge 4 feet high. At intervals of 20 feet the Yews are allowed to grow and are cut into the form of pyramids. A broad border 12 feet wide runs all round, with rockwork at the back for Alpine and similar plants. The borders were planted with choice *Auriculas*, *Myosotis*, and the most popular of our spring-flowering plants, besides a good collection of *Phloxes*, *Delphiniums*, and *Pentstemons*. I very much regret that my visit was on the 24th of March, when everything exposed to the wintry elements was suffering from the severe ordeal they had just passed through. The plants used for the embellishment of this garden might be counted by thousands, and when in their full glory must be seen to form any idea of their exquisite beauty. We now leave this interesting scene—interesting in more respects than one; for who of us that have passed the meridian of life can look on a spring flower garden without calling to mind those happy days of boyhood when we planted our first *Daisies* and *Primroses* on the little plots of ground by the old house at home? As we leave this spot of pleasant associations we travel towards the kitchen garden. This is separated from the pleasure grounds by a broad belt of grass with a gravel walk in the centre 10 feet wide. On the right there is a Yew hedge 4 feet high, with pyramids 25 feet apart and about 12 feet high.

Passing through a pair of iron gates we come into the kitchen garden. It is two acres inside the walls and one acre outside, and the orchard is three acres and a half. The pleasure grounds including the terraces are fourteen acres. The kitchen garden is divided into four squares, and the walls are flanked with a border about 14 feet wide. It is surrounded with well-built walls except the east end, which is partly iron palisading. The walls are all furnished with useful fruit trees—fine examples of skilful training. The wall with west aspect is covered with Pears on the Quince and trained in the horizontal form. The first half of the north wall is covered with Red Currants, and the border is planted with Raspberries. The other half is occupied with Morello Cherries, and the border with Red Warrington Gooseberries. When the fruit is nearly ripe the whole border, including the wall, is covered with nets, which preserve the fruit from the depredations of birds and prolongs the season of desserts. The wall with east aspect had the lower half planted with Pears, and the upper half Plums and Cherries trained in the fan form. Among the Plums were some fine trees of Washington Green Gage and Golden Drop. On the south wall are the vineries, 105 feet long. To the west of these there are Peaches of sorts; but the late winters have considerably damaged the trees, which prove the need of glass coverings for these tender fruits in this our variable climate. The wall at the other end of the vineries is devoted to Apricots.

The vineries are 35 feet long each, lean-to's, and about 18 feet wide. The first house is filled with Black Hamburgs, the fruit just set and swelling-off a useful crop. The second house is Muscat of Alexandria, one Vine of Muscat Hamburg,

and one of Chasselas Musque. The Vines were just breaking, and from their vigorous appearance gave promise of a good crop. The Vines in the third house, Bowood Muscat, Muscat of Alexandria, Lady Downe's and Black Hamburg. These houses, like many others at this season, were doing double duty, for they contained thousands of bedding plants, which will be used by-and-by for the decoration of the terraces.

Round the kitchen-garden walks are some fine Apples and Pears trained as pyramids, which bear heavy crops of fruit. In the rear of the garden is a large Mushroom house with beds in full bearing; also rooms for young men, potting-sheds, &c. There is also a useful span-roofed house which answers many purposes. Besides a collection of Ferns, the house contains pot Vines in good condition started about November. Another space is devoted to Cucumbers and Melons, and notwithstanding the multitude of subjects all appeared at home and in excellent health. Mr. Young, besides having the care of the gardens, has the management of the home farm, which is several hundreds of acres. I did not go over the latter, but every part of the gardens bore testimony of consummate skill and ability. Mr. Young's cottage is situated at the east angle of the kitchen garden, and is for size, convenience, and accommodation a model gardener's dwelling. Mr. Young was not only exceedingly courteous, but spared no pains to point out all objects of interest.—R.

REPORT ON RED AND WHITE CURRANTS FRUITED AT CHISWICK 1875.

THERE is, perhaps, no class of fruits in ordinary cultivation in this country in which so much confusion exists in regard to their nomenclature or their distinctive merits as in that of Currants. Names exist in plentiful variety, but the fruits of all the kinds are very similar, so that it has been impossible to distinguish them. The varieties may vary to some extent as to the size of the bunches, berries, their colour, cropping qualities, &c.; but as these are considerably affected by cultivation, situation, &c., their comparative and distinctive merits can only be ascertained when all the varieties are grown together under the same conditions, as in the present instance.

The collection, consisting of forty-five reputed distinct varieties, was got together from various quarters, and represents the most of the names to be met with in English nurseries and a few of the French. Altogether there exist about sixty distinct names as applied to the Red Currants and about fifteen to the White, so that the remainder have to be collected and described.

The classification is based chiefly on the appearance of the plants, their foliage, habit of growth, &c. This is very decided, distinct, and easily to be recognised. The typical names adopted may not in every instance be correct, but the varieties given as synonyms are all identical the one with the other as they have been received by the Society. There is no means of distinguishing any of the varieties by their fruit alone.

REDS.

1. RED DUTCH [*syns.*, Fertile d'Angleterre, Fertile de Palluan, Fertile de Bertin, La Hâtive, Hâtive de Bertin, Bertin No. 9, Belle de St. Gilles, Chenonceaux, Grosse Rouge de Boulogne, Queen Victoria, Red Grape].—This is one of the best varieties in cultivation. A most abundant bearer, and ripening early. The bunches are long, and the berries large, full, and juicy, of a bright red colour. The plant is of a dwarf and somewhat slender habit of growth, never attaining a large size. The leaves broad and flat, deep green, having a sort of metallic glaucous hue, which renders it in appearance quite distinct. The synonyms here given are all referable to this one variety, and which is the one generally grown and known in this country as the Red Dutch.

2. KNIGHT'S LARGE RED [*syns.*, Knight's Sweet Red, Goliath, Fielder's Red, Palmer's Late Red, Pitmaston Red, Pitmaston Prolific, Large Sweet Red, Bertin No. 1, Dancer's Selected].—This variety is not quite so early as the Red Dutch. It is a most abundant bearer. The bunches are long and produced in immense clusters. Berries of medium size, of a bright red colour. The plant is of strong and vigorous growth, the shoots growing mostly erect. Leaves pale green, rather small, somewhat deeply out and crumpled in appearance. This variety is the one in most general cultivation in the market gardens around London, having probably been selected for its fine vigorous constitution. Messrs. Krolage of Haarlem sent fruit-

ing branches of this variety as the true Red Dutch Currant as grown in Holland.

8. OLD RED [*syn.*, *Rouge Commun*].—This greatly resembles the preceding. The plant is of most robust growth, but a poor cropper and with small berries. It is most probably the original stock from which Knight's Large Red, the present common variety, has been selected.

4. RED CHERRY [*syn.*, *La Versallaise*].—The berries of this variety are very large and handsome, almost like small Cherries; but they are produced very sparingly, the bunches frequently consisting of only one berry, and from twenty to thirty berries on a plant. The plant is of a gross spreading habit of growth. The shoots pale, very gross. Leaves very large, broad, deep green. It is unsuited for cultivation in the open ground, as the shoots from their gross nature break off so easily, and so no plant is formed. The buds do not break freely after pruning. Grown against a wall it is more satisfactory.

5. HOUGHTON SWEETING [*syn.*, *Houghton Castle, Orange-field*].—This is a late variety. The berries of medium size, deep red, and rather acid. Bunches long, produced in very thick clusters. A most abundant cropper. The plant is of a very robust, close-growing, sturdy, stubby habit, very rarely producing long shoots. The leaves are small, deep dark green, somewhat deeply cut and crumpled in appearance. Very distinct. This variety from its close compact habit of growth and sturdy constitution is very suitable for growing in exposed situations and for training as an espalier or pyramid.

6. GONDOUN [*syn.*, *Raby Castle, May's Victoria, Imperiale Rouge, Hollande à grappes longues*].—This is a remarkably strong-growing late variety. The bunches are very long. Berries large or above medium, of a bright red colour with a sharp acidity. As a bearer it is only medium. The plant is of a most robust growth, soon forming large bushes. Shoots strong, reddish. Leaves large, dark green, with reddish veinings, flat, deeply cut, very showy, and very distinct. The flowers have also a reddish tinge. This is one of the latest Currants to ripen and hang well on the plants afterwards. The plant from its strong vigorous growth is very suitable for growing as standards or large bushes.

7. VERRIERS ROUGE.—This appears to be a compact dwarf-growing form of the Gondoun.

8. MALLOW-LEAVED [*syn.*, *New Sweet Red*].—This is a strong-growing late variety. Bunches long. Berries small, of a pale red colour. Late in ripening and a somewhat poor cropper. The plant is of very distinct appearance, strong, tall-growing, with pale shoots. Leaves large, flat, soft, downy like a Mallow, of a pale green colour, sometimes like the Black Currant.

9. LACED-LEAVED [*syn.*, *Large Sweet Red, Large Red, d'Hollande à feuille bordée*].—A fine, compact-growing, bushy variety. Bunches of a medium size. Berries medium, of a pale red colour. A most abundant bearer. Shoots dark, spreading. Leaves dark green with a glaucous hue, and the greater portion, more especially those in the shade, having a narrow silver lacing or border, giving the plants a slight variegated appearance. A very excellent good-habited variety.

10. CUT-LEAVED [*syn.*, *Feuille laciniée, Eyett Nova*].—Plant of somewhat slender spreading growth. Bunches of medium size. Berries small, of a pale red. A very poor cropper. Leaves small, deeply cut, or lacinated and pointed, rendering it very distinct in appearance.

11. VARIEGATED [*syn.*, *Feuille panachée*].—This is a variegated-leaved form of the common Red. A poor cropper. The leaves are prettily variegated on their appearance in spring, but soon become dull and dingy.

12. STRIPED-FRUITED.—This in appearance resembles the common Red. Berries small, pale in colour, with one or two darker stripes, rather pretty. A very poor cropper. The Gloire des Sablons is stated to be a White variety, prettily striped with red. At Chiswick it proved the same as Gondoun.

13. CHAMPAGNE [*syn.*, *Couleur de Chair*].—This is remarkable on account of the colour of the berries, which are pale flesh, and their sweet flavour being exactly similar to the White varieties. Bunches short. Berries small. The plant is of dwarf bushy habit and robust. Leaves broad, flat, having the appearance of the Red Dutch. It is an abundant bearer. A desirable variety.

WHITES.

14. COMMON WHITE [*syn.*, *Blanche Commun*].—Plant of dwarf bushy habit. Leaves small, deeply cut and crumpled in their appearance. Bunches small; berries small.

15. WILMOT'S LARGE WHITE [*syn.*, *Blanche d'Angleterre*].—Plant of free somewhat erect growth. Leaves large, flat. Bunch of medium size. Berries large, white. A good cropper.

16. WHITE DUTCH [*syn.*, *Blanche d'Hollande*].—Plant, leaves, &c., of exactly the same appearance as the Red Dutch—dwarf, compact, bushy. Bunches large; berries large or very large, of a yellowish-white colour, very fine, juicy, and sweet. A great cropper.—A. F. BARRON.

DO RABBITS EAT LILiums?

My experience is that rabbits do eat Liliums. Here they most assuredly did, but had not long the chance, as we put a rabbit wire across the part of the garden where the Lily beds were. My man says they principally fancied *L. auratum*. My recollection is that *L. longiflorum*, as being the earliest Lily, was their favourite.—GEORGE F. WILSON.

RABBITS are curious animals and hard to understand. In one place they will eat of vegetation that in other places is left untouched. I have never known them eat *Rhododendrons*, but Mr. Robson has stated that he has known these shrubs to be destroyed by rabbits. I know of a large collection of white Lilies, *L. candidum*, where rabbits abound, but the Lilies are never touched. I obtained some of these Lilies and planted them, and these the rabbits almost destroyed. It was, perhaps, to gratify their curiosity rather than their taste, for in after years they left the Lilies uninjured. I know a shrubbery which is infested with rabbits, and in that shrubbery are large clumps of the old kinds of Lilies—*bulbiferum* and *chalcodonicum*—which are never injured; but probably if these were removed and replanted they would be nibbled by the rabbits. Where rabbits are numerous and Lilies are desired it will be safe to protect the plants for at least a year, and after that I think there would not be much danger of their being eaten by rabbits. I have had no experience with *L. auratum* in a rabbit-infested district.—A. FORESTER.

RHODODENDRONS.

I HAVE been much interested in the articles and letters on these charming shrubs which have appeared in our Journal, and I write to ask if Mr. Luckhurst and any of your readers will make a selection of the varieties which they think the best. There are such an enormous number of varieties in cultivation that it is a difficult matter to select the best. I have a fair collection, but should like to add to it.

I have found Mr. Robson's guide as to the soil wherever the Foxglove abounds being suitable for the *Rhododendrons*, perfectly safe to follow. I quite agree with him also that composts as a rule are a mistake. I tried the very pond mud he mentions, and my plants refused to thrive in it; but when they were planted between the standard Roses they did splendidly. I have found also a north border suit them very well.

These shrubs are becoming, and deservedly so, most popular. With me Azaleas and even Camellias do out of doors, but the flowers of the former are small, and not to be compared to the best varieties of *Rhododendrons*.—JOHN B. M. CAMM.

[A dozen early kinds affording a succession of flowers from January to May in favourable seasons are *Dauricum*, pale purple; *Dauricum atrovirens*, purple; *Præcox superbum*, a hybrid flowering in February and March. It has been very fine this season in the nursery of Messrs. Casson out on Thorn Moor, near Doncaster—a sufficient severe test of its hardiness. *Mnemosyne Caucasicum grandiflorum*, March and April; *Varium*, deep pink; *Altaclarensis*, scarlet; *Soliel d'Austerlitz*, bright scarlet; *Blanc Superb*, white; *Empress Eugénie*, white; *Limbatus*, delicate rose margined with carmine; *Broughtoni*, rosy crimson; *Pictum*, bluish white-spotted.

Two dozen mid-season and late kinds are *Alarm*, white with a margin of bright scarlet, very long foliage—a brilliant and striking variety; *Purity*, a fine kind with delicate white flowers; *Duo de Brabant*, yellowish white, red spots, fine trusses; *Nero*, dark purple-spotted, compact growth—a very free-flowering kind; *Titian*, rosy scarlet; *Mrs. John Clutton*, very fine white; *Mrs. G. H. W. Hemeage*, bright purple with white centre; *Afrosanguineum*, deep red, very free-flowering; *Lady Eleanor Cathart*, light crimson, spotted with chocolate; *Bouquet de Flore*, a profusion of spotted crimson flowers, very large trusses; *Blandyanum*, rosy crimson; *Sir Thomas Sebright*, rich purple; *Nigrescens*, dark purple; *Maculatum nigrum*, dark rose-spotted;

Vandyke, a very fine free-flowering crimson kind; Barelay-anum, a splendid variety with deep rich crimson flowers; Hogarth, scarlet; John Waterer, deep crimson, very distinct and excellent; Hirsutum, a dwarf late kind with pretty crimson flowers; Roseum grandiflorum, deep rose; Elida, rose flowers, spotted; John Spencer, rose, with a deep pink margin; Stella, rose, spotted; Concessum, pink.

Those kinds which flower very early should have sheltered positions. They are admirably adapted for an occasional niche formed with other evergreens along the front of shrubbery borders, imparting a brightness, life, and beauty that is most desirable among hardy shrubs so early in the year.—EDWARD LUCKHURST.]

THE BLANKNEY MARROW PEA.

A GENTLEMAN having three estates and nearly twenty acres of kitchen gardens in the charge of able gardeners considers the Blankney Marrow the most delicious Pea in cultivation. The gentleman is a great patron of gardening, and especially of vegetable-growing, and takes careful note of the qualities of all vegetables that are provided for his table. In his gardens all the new Peas have been cultivated, and his testimony is therefore worth recording. It is to be remembered that other judges have not considered this Pea superior, if equal, to some others; but that it is steadily rising in popularity is pretty clear by the demands for seed that cannot be easily supplied.

This is known as the Grotto, Mossy-podded, and Australian Pea. It is a green Marrow growing 6 to 7 feet high, the pods being covered with a rough excrecence; the peas are medium-sized, and the pods are well filled. It is a late and mildew-resisting Pea, and sown at the present time will yield useful produce in the autumn.

This is a distinct Pea of disputed merit, and any other testimony regarding it would be instructive.—CLERICUS.

KILN DUST AS A MANURE.

My experience in Potato-growing with many different kinds of manure is singularly like that detailed by "J. M." on page 278. My conclusions are also similar to those of "J. M.," that kiln dust is one of the most valuable of manures for Potatoes that can be applied. I have made numerous and careful experiments in Potato culture, and have tested various manures. These experiments have extended over a series of years, and consequently in seasons widely differing from each other; yet, except perhaps in the very driest of seasons, no manures have given such satisfactory results as farmyard manure dug into the ground in the autumn, and kiln dust applied in the spring at the time of planting the Potatoes.

My attention was first directed to the value of kiln dust by the luxuriance of the crops of vegetables in the garden of a brewer. The soil naturally was poor, and in it the Potatoes were always cankered and unsightly, and the Onions were generally devoured by the grub. Kiln dust was then applied freely, and in a few years no garden could produce better and cleaner crops. I obtained some of the dust, and tried it with various other manures in the kitchen garden, then under my charge. Its effects were so satisfactory that my employer at once adopted its use on a large scale in the field culture of Potatoes.

The first application was made on about an acre of York Regents, and the produce from this acre was more than one-third greater in value than the acres on both sides of it. The Potatoes were larger, better, and more free from disease than were the crops that had no dressing of kiln dust.

Its extensive use on the same farm with Potatoes and other crops has proved its undoubted value, for it has now been freely used for several years. It has been applied to grass land and cereals with uniform good results, so good that the quality of Barley from the farm has been pronounced by the agent of Mr. Baes to be the best that has come under his notice, and for which a considerably higher price has been given than for any other samples in the neighbourhood. It is the same with Potatoes. Their quality commands the approbation of all who use them, and the reputation of the grower has spread far beyond a merely local character.

When I state that this farm is situated in one of the best agricultural districts in Lincolnshire, and is owned and managed by the Hon. A. Leslie Melville, sufficient will be said both as to its sound management and of the proved value of kiln dust as a manure for Potatoes and other crops. I state this in order to submit that the experiments with kiln dust

have not been on a limited scale. Its good effects on the farm have corresponded with its good effects in the garden. In the garden it has been applied to all sorts of crops, not excepting the flower beds and Vine border; and I can say now what for obvious reasons I could not say before, that not many gardens produce more satisfactory crops of Grapes, flowers, and vegetables than the garden at Branston.

But the most conclusive results in favour of kiln dust have been afforded by Potatoes. For these crops it has been spread in the rows at the rate of about a ton per acre when the Potatoes have been planted, and I have never known it fail to increase the value of the crop in a substantial manner. It failed, as everything else failed, in averting disease in the unpropitious season of 1872, but even in that year incomparably the most valuable crop of Potatoes in a parish of four thousand acres was a piece of Paterson's Victoria grown by the aid of kiln dust.—J. WAGNER, *Late Gardener to the Hon. A. L. Melville.*

VIOLETS.

NEVER before this year have I seen Violets so fine as they have been with me in frames and promise to be outdoors, for as yet we have had no blooms in the beds outdoors other than of *Czar* and *Victoria Regina*, both of which we had during the last week in March, the weather being most unfavourable for them up to the close of that month. So uncertain is the possibility of having Violets in winter, on account of the weather, and the greater uncertainty of their doing well in pots, that the advantages offered by planting them out in frames are found in both quantity and quality of the blooms. The plants should be planted in rich soil at convenient distances apart, and about a foot from the glass.

I have grown most if not all kinds of Violets, and am now reduced to three kinds for certainty of gathering from day to day for a lengthened period. A frame, or rather pit, 30 feet long and 4 feet wide—a lean-to against a greenhouse—is filled in September with *Victoria Regina*, and from thence up to March inclusive we have an abundance of deep blue, large, very fragrant Violets, and with capital stalks. At the same time we fill a pit with *Neapolitan*, double, sky-blue, which bloom at the same time, we having had since September and now have abundance of this sweetest of all Violets. The variety *Devonensis* is certainly very sweet, but what is it but the single *Neapolitan*? Or what is *Blandiana* than a double *Neapolitan*? I have fished for and hooked at last the true *Neapolitan* from Florence. It is very superior to the old kind. This kind from Florence is freer in growth, is not prone to throw out numerous wiry runners, is twice as strong, has blooms twice the size of the old kind and deeper in colour, has stalks of such a length as to allow of the blooms being bunched, and it blooms from September (I had blooms last year in August) up to May.

Then we have another pit like the other two filled with *Queen of Violets*, double white, which blooms in February and continues to the close of April. On account of colour *King of Violets* and *Double Russian* have a place. They have short stalks, and flower in February and March.

If there are any Violets exceeding these three—*Victoria Regina*, *Neapolitan*, and *Queen of Violets*, I should like to know what they are. I have several other kinds—amongst them, through the courtesy of its raiser, *Prince Consort*, which has a round leaf more like *Czar* than *Victoria Regina*, is not so disposed to produce suckers as *Czar*, both *Prince Consort* and *Victoria* being more given to runners than suckers. Hence the plants are not weakened by growth from the stems. The blooms, being very much stouter in stalk, have greater substance of petal, being rounded like a *Pansy* and far advanced in size towards one. *Victoria Regina* is of the deepest blue or purple, but *Prince Consort* is paler in colour—a shaded blue-purple. I have had plants of it in a pit with *Victoria Regina*, and it grows equally well, commencing blooming in late summer and continuing through the winter, longer by a fortnight than *Victoria Regina*, upon which it is a decided advance—lessened foliage turned into redundancy of bloom. Its fragrance is of the finest kind—not so powerful as in some, but a come-again sweetness that knows no cloy. It is of the first to bloom outdoors, and is the finest of all single-flowered Violets. I do not wonder at its raiser setting so high a value upon its merits and not letting it out until he feels himself satisfied as to remuneration.

I have before stated how we grow Violets, but I may briefly

recapitulate. When the plants go out of bloom the lights are removed, and in a fortnight the plants are taken up and divided into as many parts as they have crowns, each division having a portion of root. They are planted out on a north border in rows a foot apart, and that distance asunder in the rows; but Neapolitan, Double Purple or Russian, with Queen of Violets, are only allowed 9 inches in the rows. They are well watered and attended to until established, and the future treatment consists in removing all runners as they appear, with weeds as they show themselves. The ground in which they are planted is well manured and deeply dug in autumn, and is forked over prior to planting in spring, a dressing of lime being applied prior to planting and forking.

So soon as the outdoor plants have flowered we divide them and make fresh beds, four rows of plants in a 4-feet bed, the plants being a foot distance apart for Victoria Regina, and 9 inches for Neapolitan, Double Russian, &c. No addition but water until established, the runners and weeds are removed, and a slight top-dressing in autumn of partially decayed leaves. Cocoa-nut refuse would no doubt answer better, but the cost of transit is against our using it. The outdoor plants follow the frame plants; and though we have kept the beds a second year we attain a better result by beds fresh planted annually.

The pits have about 6 inches of rubble for drainage, in front of which is a drain, for it is useless making a hole in clay and putting stones at the bottom for drainage if there be no means of the water percolating through the drainage passing away. It is simply making a hole to hold water. Upon the rubble is placed 6 to 8 inches of turfy loam three parts, and a fourth of well-decayed manure and leaf soil in about equal parts, the whole well mixed. The plants are taken up with balls and planted rather firmly and about 9 inches apart, or so that they just touch, neither crowding nor wasting any room, having after planting a thorough soaking of water, none being given during the winter; but the soil is examined in early November, and if at all dry a thorough watering is given, no more being required until February or March. The lights are not put on until frosts occur, and when once they are put on are not again withdrawn altogether until spring; but whenever the thermometer is from 35° to 40° the lights are drawn down about 6 inches, when 50° a foot or more, and when frost prevails they are kept close. About a month after planting all decayed and yellow leaves are removed, and charcoal passing a half-inch sieve sprinkled over the plants. A gentle brushing of the leaves with the hand will remove any charcoal resting upon them. In spring water is given to keep moist.—G. ARBRY.

NOTES ON VILLA AND SUBURBAN GARDENING.

KITCHEN GARDEN.

If the soil early in the season should not be in so good a state as is wished, it is advisable in many cases to delay the work of sowing for a short time, because if seed is committed to the ground when the soil is in a friable and dry condition it gains such a favourable start as to soon make up for a few days' delay; but then, on the other hand, delays are dangerous, for we must consider that as everything grown requires a stated time to develop itself, the first favourable chance must be taken to put in the crops. In order to provide for proper successions of vegetables frequent sowings must be made. When sowing small beds of seed, if the soil should not be in the best of condition, it is an easy matter to work in a little dry soil in order to secure its free working. I deem this very necessary in the case of Carrots, the main crop of which should be sown now, the seed being of a peculiar shape, with so many hairy-like bristles in them, that the soil is apt not to close round the seed sufficiently to insure its quick germination. Some of my earliest Peas have rotted in the ground instead of coming up, particularly Sutton's Emerald Gem and Laxton's Alpha, while Kentish Invicta and Sutton's Ringleader are growing strong and have come up well. Take care to sow plenty of Bath Cos and Paris Cos Lettuces; towards the end of the month all such sowings are best made in drills and the plants allowed to remain after being thinned out. They then grow into more bulk during the hot weather of summer. Where vegetables have to be sent to London in the season a small Lettuce is not worth much after being shorn of its outside leaves after travelling. I like to send all salading in small baskets and separated from the heavy vegetables.

It is time to see about sowing Dwarf Kidney Beans. I advise for the early crop that they should be sown under a hand-light of good soil, and afterwards planted out in a warm spot of rich soil. I do not think that they crop so heavily thus treated, but as they are wanted as early as possible this must not hinder. Sion House and Newington Wonder are excellent sorts. Sow the Musselburgh Leek, Salsafy, and Scorzoneria and early Dutch

Turnip. It is rather early to sow the main crop of Beet, but a little may be sown for early use, though some plants may run to seed. Hand-glasses may now be removed from Cauliflower, and they will come in for other crops. Sow also the main crop of Celery in a frame near the glass, to be afterwards pricked out on a border. Some sow the main crop in March, but I have never found there was much advantage in that; of course for very early use a little seed must be sown early.

FRUIT GARDEN.

About here Apricots are setting freely, and if the weather allows them to swell-off there will be some to spare for preserving in the green state, but at present they are looking more yellow than usual. The young growth of Peaches and Nectarines is coming on fast; it will, therefore, be best to take an early opportunity to disbud a little. Disbudding must be done carefully and at different times. Take care that the green fly does not gain too strong a hold upon the young shoots, for if mischief is done so early it is not easy to remedy it.

In vinerias where the fruit is well set take care that the thinning is done in time, and the young growing shoots stopped in twice or thrice this month. The heat must not be less than 65° at night, and up to 75° or 80° by sun heat in the day, with plenty of moisture added to the floor of the house, but not syringed over the fruit if a good bloom is wanted. The inside borders must be well watered, sometimes with liquid manure, and if the outside roots are well protected do not remove it in the present stage of the fruit, but the late-house borders may be treated differently.

FLOWER GARDEN.

My Calceolarias, Grassanias, and several other half-hardy plants intended for the summer bedding are all planted out in a prepared bed of soil. Had it not been for some alterations in the garden, many of them would have been in the beds, as they could be protected there quite as well as where they are. I do not like moving the Calceolarias much, because the checks they receive make the wood hard too early, and the plants do not grow so freely as is desirable for a continual flowering.

All tender annuals, such as Stocks, Zinnias, Asters, Mignonne, Marigolds, &c., have been sown, and many of the seedlings are up. Sweet Peas, Maurandias, Tropaeolums, and Lophospermums have been sown. These being mostly climbers and are used for covering walls and other blank places, they have been sown in small pots, from which they can most conveniently be planted out at the proper time. Beds of hardy annuals will now be coming into flower; let them be kept free from weeds, and if the grass around them is kept neatly cut they will soon look fine.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

We have just been examining the Apricot trees, and although the blossoms projecting considerably from the wall have been killed (they were unprotected and in full flower when the thermometer registered 10° of frost on the 19th of March), those close to the wall are safe, and the fruit seems to be swelling freely. Apricots do not suffer from the attacks of insect pests, except that a small maggot will sometimes be found to eat the young leaves; it draws the leaves round it, and eats in the centre of its protection. This maggot can only be effectually destroyed by hand-picking. The weather is now very favourable for the production of red spider and aphid on the Peach trees. Usually the aphid can be most readily destroyed by washing the leaves with strong soapy water to which has been added some tobacco liquor. If the trees can be enclosed by nailing stout canvas to the top of the wall and also down the sides of the trees fumigating with tobacco smoke may be tried, and if this is done in a calm night the smoke will be long enough retained about the trees to destroy the aphid.

Notwithstanding the very large crops of fruit last season there is good promise of plenty this year, nearly all sorts of fruit trees showing abundance of blossom. Trees that were planted in autumn or early winter will not require any water at the roots, but if they are planted against a wall well exposed to the sun it will be a great help to them if they are syringed once or twice a day. Newly-planted trees may require water at the roots as well as the syringing, but it is not desirable to water them if it can be avoided; the syringing moistens the ground to some extent.

Vines on Walls.—A gentleman sought advice from us the other day about his Vines. He had a most excellent position to grow them, but for several years the Vines have had plenty of leaves but no fruit whatever. The reason of this was not far to seek: the gardener had continued to prune on the short-spur system for years until the spurs were only able to produce weakly growths which never showed fruit, nor would they ever do so. Royal Muscadine is the best out-of-doors Grape, and this was the variety grown; but to grow fruit as well as leaves a

certain number of young canes must be trained-up from the base of the Vines annually. As the Vines are now starting into growth they must be disbudded, and a little care must be exercised in selecting the most suitable growths. None of the rods ought to be older than three or four years. Vines on walls are also as a rule too much crowded with wood. The shoots should have ample space for development. It is not the quantity but the quality of the wood that is to be depended upon to produce good fruit.

We have planted-out Strawberry plants in the open ground. New sorts are sometimes received late in the season, and to make the most of the plants they are potted as soon as received in small pots and placed in a light airy house on a shelf near the glass, which is the best position. They may be plunged in some dryish material in a cold frame, but if the plants are weakly they sometimes suffer from damp. By the first week in April the pots are well filled with roots, and if the weather is fine they may be planted out after being duly hardened-off.

ORCHARD HOUSE.

The trees here seem to be quite safe. The Peaches and Nectarines have set their fruit well. Pears and Plums are also very promising. They are now in full flower, and are so late because they were kept out of doors until quite recently. There is as yet no appearance of aphid or red spider, and should any appear later it will be washed off by hand. The house was well fumigated by tobacco smoke before the trees came into flower. A gardener once showed us some Peach trees in flower with aphid increasing rapidly upon them. Our advice to him was to fumigate the house before the blossoms opened, but he would not take the advice. "What was the use? not a single green fly was to be seen at that time." If they are not to be seen they can be killed; as we find, if the trees are well fumigated early in the year, aphid seldom appears to do much harm that season, whereas if early fumigation is neglected the reverse is the case.

The blossoms are not yet set upon some of the sorts that have flowered later than the others, so that we cannot at present syringe the trees that are forward enough. While the trees are in flower it is necessary to maintain a dry atmosphere, and more especially if there are Pear trees in the house. Cherries and Apricots also require a dry airy atmosphere while in bloom.

VINERIES.

The Grapes in early houses have now entered upon the stoning period. We have had a few days of very bright sunshine, and the leaves have slightly suffered from the effects of the sun acting directly upon them. There are two ways to prevent scorching at such a time—either to slightly shade the house, or throw all the ventilators and doors quite open, and sprinkling plenty of water about in the house to cause a moist atmosphere. If a keen east wind should be blowing it is not quite safe to have much ventilation, and in that case a slight shading will be necessary; but it should not be done unless the effects of the sun is seen upon the leaves.

It is well to look over the bunches at this time, and should too many berries have been left, or any that are stoneless, they ought to be removed. Many persons thin their bunches too much in the centre. The result of this is to spoil the appearance of them when they are placed upon the table—they "fall all over the place" instead of laying compact and firmly as they ought to do. A fruit salesman told us that a certain grower always had a good price for his Grapes, because the berries stood up so firmly in the baskets owing to the correct manner in which the berries were thinned out. Those bunches that are too much thinned fall about, and the bloom is rubbed off the berries. It is difficult to teach anyone to thin Grapes by writing about it. Everyone must learn from experience. Even a practised man is sometimes at fault until he knows to what size the berries are likely to grow.

We are busy tying-out the lateral growths in the late Muscat house. As this house is attached to the early houses and heated by the same boiler, we take advantage of this to turn the hot water on. The Vines were late in starting this season, and we push them forward to have the Grapes ripe in good time in the autumn.

PEACH HOUSE.

Where the fruit has passed the stoning period and has taken the second swelling, the temperature may be increased during fine weather; 70° at night would not be too high in mild weather, but 65° should not be exceeded in cold weather. The trees should be syringed freely night and morning with tepid water, and the water should be applied with some force if spider has appeared upon the leaves. The trees ought to be quite free from insect pests before syringing is discontinued. In a previous number full instructions were given as to training the growths and thinning-out the fruit. It is quite as well to remove all gross overgrown wood at this time. The fruit will be set in the late houses, and syringing may be begun at once. Should any green fly be upon the trees it must be destroyed forthwith, and the inside borders must be sufficiently moist else the fruit will probably drop.

PLANT STOVE AND ORCHID HOUSES.

If it is necessary to shift free-growing plants, such as Begonias, Caladiums, or any that are free-rooting, and if space can be afforded for their free development they may have plenty of pot room, and when fresh roots are formed water may be freely applied, and the houses be closed early to utilise sun heat.

All the cuttings that we require have been put in and are now rooted plants. Those who have not propagated the stock that they require should lose no time in doing so. All cuttings are the better for a little bottom heat, and they strike roots more freely if a hand or bell glass is placed over them. Cuttings taken from stove plants are very apt to flag if exposed to the air, and this they ought not to be allowed to do. Tying and arranging the growths on climbing plants, such as Stephanotis floribunda, Olerodendron Thompsons, Bougainvillea, and other plants of the same character, must not be neglected.

We have been repotting many different species of plants, and in doing this two main points are kept in view—namely, carefully draining the pots with clean potsherds, and placing some tough fibrous loam or peat over the crooks to prevent the compost from mixing with them. No plant is potted unless it is moist at the roots, nor is water applied until the fresh rootlets are formed.

Orchids that are starting into growth and making their roots at the same time are potted at once if they require it. The growth of some is very rapid, and if repotting is delayed the plant suffers. Plants of any of the species that are in flower last much longer in beauty if they can be removed to a cooler house where there is not too much moisture. The beautiful Dendrobiums, such as *D. Farmeri*, *D. densiflorum*, *D. clavatum*, and many others, last but a very few days in the high steaming atmosphere of the East Indian house. Mexican Orchids seem to require more sun than those from other parts; they should be placed in the most exposed part of the house. New Grenada *Odontoglossums* and *Madevallas* require plenty of shade, and the same may be said of nearly all the East Indian species. Close the houses early in the afternoon, and sprinkle plenty of water about at the same time. *Cypripediums* and some *Dendrobiums* may be freely syringed.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

ALEXANDRA PALACE. Flowers, May 6th and 6th. Roses, July 7th and 8th. GLASGOW. May 10th, and September 13th and 13th. Mr. F. Giff. Doughall, 167, Canning Street, Sec.

WESTMINSTER AQUARIUM. May 10th and 11th, May 30th and 31st, July 5th and 6th.

CRYSTAL PALACE. Flower, May 19th and 20th. Rose, June 16th and 17th. TIVERTON. May 24th and 25th. Messrs. A. Payne and J. Mills, Hon. Secs.

MANCHESTER (Grand National). June 2nd to 5th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.

SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fudge, 39, York Street, Sec.

SOUTH ESSEX (LEYTON?). June 18th. Mr. G. E. Cox, Wilmet Road Leyton, Sec.

EDINBURGH (Scottish Pansy Society's Show). June 16th. Mr. N. M. Welsh, 1, Waterloo Place, Edinburgh, Sec.

COVENTRY. June 19th. Mr. T. Wilson, 8, Portland Terrace, Sec.

MAIDSTONE (Roses). June 21st. Mr. Hubert Bensted, Rookstow, Maidstone Sec.

FARNHAM AND SOUTH HAMPSHIRE. June 21st. Mr. H. Smith, Sec.

SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.

EXETER (Roses). June 23rd. Mr. T. W. Gray, Hon. Sec.

BRIGATE (Roses). June 24th. Mr. J. Payne, Treasurer.

LEEDS. June 28th, 29th, and 30th. Mr. James Birkbeck, Delph Lane, Woodhouse, Leeds, Sec.

WEST OF ENGLAND (HEREFORD). Roses. June 29th. Rev. C. H. Bulmer, Credenhill, Sec.

RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.

FROME (Roses). June 29th. Mr. A. R. Bally, Hon. Sec.

MARSDEN. July 1st. Mr. J. H. Edmondson, Hon. Sec.

ROYAL GALLOPDIAN HORTICULTURAL SOCIETY. July 5th and September 18th.

SOUTHPORT. July 5th, 6th, 7th, and 8th. Mr. E. Martin, Sec.

NEWARK (Roses). July 6th. Mr. F. R. Dobney, Sec.

HEWLEND (Roses). July 12th and 13th. Mr. J. Mitchell, Sec.

WIMBORNE. July 12th and 13th. Mr. P. Appleby, 5, Linden Cottage, Hon. Sec.

KILMARNOCK. Roses, July 14th and 15th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.

TORRINGTON. July 19th. Mr. W. Blair, Hon. Sec.

WYKEHAM. July 25th. Mr. J. B. Shirley, Hon. Sec.

BRIGHOUSE. July 25th. Messrs. C. Jessop & E. Rawnsley, Hon. Secs.

HEWORTH (Horticultural). August 2nd. Mr. E. H. Felton, Hon. Sec.

BAWTHRELL (ROSEDALE). August 4th and 5th. Mr. M. J. Lonsdale, Sec.

TAUNTON DRAMA. August 10th. Mr. F. H. Woodford, M.D., and Mr. Clement Smith, Hon. Secs.

CLAY CROSS. August 16th. Mr. J. Stallard, Clay Cross, near Chesterfield, Sec.

WESTON-SUPER-MARE. August 15th and 16th. Mr. W. B. Frampton, Sec.

PERSTON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.

SHEFFSWORTH. August 16th and 17th. Admrs. & Naughton, Hon. Secs.

MIRFIELD HORTICULTURAL. August 19th. Mr. George Senior and Mr. John Rushforth, Hon. Secs.

RAMSGLATE (LALS OF THAMPT). August 23rd. Mr. R. B. Schartan, Broad-stall, Sec.

SEATON BURR. August 26th. Mr. R. Richardson and Mr. W. Elliott, Secs.

DURDEEN (International). September 7th, 8th, and 9th. Mr. W. B. McKelvie, 26, Euclid Crescent, Sec.

TRADE CATALOGUE RECEIVED.

John H. Ley, Royal Nursery, Lansdowne, Road, Croydon.—
Catalogue of Ornamental-foliaged and other Plants.

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

GARDEN PLANS (J. D.).—There are engraved plans and modes of planting them in "Flower Gardening for the Many." You can have it by post if you enclose five postage stamps with your address.

LYTTE'S HERBAL (B. Naturalists' Club).—It is not the earliest of our Herbals. Turner's preceded it; and earlier than that, Anthony Aesham's. This is the earliest published English Herbal we know; it was published in 1550, and is entitled "A Treatise of Astronomy, declaring what herbes and all kinds of medicine are appropriate." Henry Lyte was born in 1559, and graduated at Oxford about 1546, but at which college is not known. He died in 1607, and was buried in the north aisle at Charlton-Mackarel Church in Somersetshire. He had travelled much in foreign countries, and was a good scholar. He wrote "The Light of Brittain," and presented it to the Queen "when she came in royal manner to Paule's Church." It is a brief history of ancient England. But his best known volume is his translation of Rembert Dodon's book on plants, now known as "Lyte's Herbal." He was led to such a study by the neighbourhood in which he lived. It is peculiarly beautiful—cultivated hills with rich valleys between. Sumner is the Saxon name, and signifies pleasant. He assigns as his reason for translating the book, that "a good thing the more common it is the better." The dedication to Queen Elizabeth is "from my poore house at Lyteacarie, within the countie of Somerset, 1st of Januarie, 1578." Lyte Cary is in the parish of Charlton-Mackarel, near Somerton, and had its prefix from the Lyte family, who for centuries had a large mansion here, in which was a chapel, and on the walls of which were depicted their arms—gules, a chevron argent between three swans proper. These arms have been assigned both to the Lyte and Cary families.

PROFIT FROM THREE ACRES (J. N. L.).—No one can answer your query—situation, crops, and skill being unknown to us.

GARDEN GLOVES (G. M.).—Apply to a maker, not a mere retailer, of leather gloves.

LECTURES AT SOUTH KENSINGTON (J. H. E.).—Write to "The Secretary, Royal Horticultural Society, South Kensington," for the information.

ASPARGUS (P. Puller).—You were right not to cut the stems down below the surface.

HEATING HOUSES WITH GAS (Sir Astley).—You will, we fear, find the heating with gas very much more costly than your present arrangement. To heat with gas you will require a copper boiler, and every part of its surface exposed to the direct action of the flame, and must be at 1 foot of boiler surface to 25 feet of radiating surface. A zigzag or other form of gas boiler would answer, having 4 feet of surface exposed to the direct action of the flame and about as much of indirect surface, but we could not say how many burners you would require. For your purpose we consider your houses would be most economically heated by a boiler at the back of a kitchen or other fire if you have one conveniently situated, or failing that we advise you to consider the cost of heating 4-inch pipes with gas, and the certainty of your having a supply of gas at all times. Heating with gas is very much more cleanly than any other mode of heating, and where a certainty of supply can be ensured is the most desirable method of heating a small house attended to by an amateur. We advise your keeping to present arrangements.

CUCUMBERS AND TOMATOES EATEN BY SNAILS (Idem).—Not stating the temperature we cannot say whether it is too high or otherwise for the plants, but Cucumbers and Tomatoes do fairly well together. Dust the surface of the bed or borders with quicklime about an hour after dark, and scrutinise the walls, &c., at right after dark with a lantern, by the one or other of which means you may clear your house of the snails, which we apprehend have been introduced with the soil.

CUTTINGS OF RHODODENDRONS AND LAURELS (C. B. P.).—Rhododendron cuttings may be inserted in peat covered with silver sand—the cuttings being of the young wood when the base next the old wood is getting a little firm—in a cold frame until a callus is formed, and then placed in gentle bottom heat until well rooted, gradually hardening off. Portugal and common Laurel cuttings may be put in at the end of September, the current year's growth with a heel about an inch of the two-year-old wood, inserting two-thirds the length of the cuttings in the soil, and making the soil firm about them. In the autumn following they will be fit to transplant.

GRAFTING RHODODENDRONS (David Turtle).—It is best done in late August or early September. Side-grafting is most eligible, the plants after grafting being placed in a close-shaded frame until the grafts have taken, as they will in about six weeks, after which harden-off by admitting air gradually at first until the plants can endure full exposure.

BAD SEEDS (Disappointed).—We fear that the harvest for Peas was last year very unfavourable, and to ensure full rows it is well to sow thicker than usual. Some of the seedsmen recommend this course, and they have, no doubt, substantial reasons for doing so.

SEWAGE FOR VINES AND PLANTS (Lindum).—We do not consider this the best manure to apply to Vines and plants. It contains manurial properties, and it may be applied to Vines without being diluted, and to certain strong-growing plants with an equal quantity of water.

RED SPIDER ON PEACH TREES (Rev. C. Bury).—As soon as the fruit was

gathered last year the trees ought to have been cleansed from this pest by syringing. You ought also to have mixed some sulphur and a portion of soft soap with the water for winter-dressing the trees. Had this been done the spider would not have appeared. Fumigating with tobacco paper will not destroy it. By the time this appears in print the blossoms will be set, when the trees may be thoroughly syringed twice daily in fine weather. The water must be applied with considerable force. Nothing more will be required to keep the spider in subjection.

MANAGEMENT OF YOUNG VINES (C. B.).—It would be better not to cut the canes over so late as this; but as soon as the buds have started rub off all except two or three of those nearest the root.

GLASS COPING FOR FRUIT TREES (J.).—No coping ought to remain upon the walls when the danger from frost is over. It prevents the rain and dews from falling upon the leaves; and any insect pests would be more comfortable under its protection than if exposed.

WHITE CAMELLIA (M. H.).—It is not unusual for a white flower to be produced on a pink-flowered Camellia.

WEEDS ON LAWN (T. E. O.).—It is one of the Ranunculus genus. A woman with a knife will best eradicate it.

SEEDS FROM THE ROYAL HORTICULTURAL SOCIETY (R. Bidwell).—We do not think that was an undertaking to do the same annually, but they are now to be had on application.

BOWING PRIMULA AND GLOXINIA SEED (B. S.).—Drain the pots well and over the drainage place an inch of the sittings of the following compost:—Three parts of light fibrous loam, and one part each of leaf soil and sandy peat, with one part of silver sand, filling to within half an inch of the rim with the sifted soil for the Primula, and to within an eighth of an inch for the Gloxinia seed, the soil to be made rather firm and even at the surface. The seeds to be scattered evenly, and covered, as regards the Primula, with soil an eighth of an inch deep, the Gloxinia seed being lightly sprinkled over with very fine soil or silver sand, it being well in the case of the pot for the Gloxinia to water before sowing the seed. They should both be placed in a hotbed and kept moist, avoiding making sodden, or on the other hand of becoming too dry. In a fortnight to three weeks the plants will be well up. A Cucumber or other frame hotbed will answer admirably for raising the plants.

BAMBUZA METAKE FLOWERING (M. D.).—It is unusual for this plant to flower from its not having a sufficiently favourable position. The flowering is due to your having it in a conservatory planted-out favourable to its free growth and ripening. It will no doubt give you a quantity of seeds.

HOLLIES WITH NAKED LEADERS (G. P.).—The cause of long "naked" leaders is the free growth—healthfulness of the plants, due in a measure to good soil. If you wish more side branches shorten the leaders to half their length; but this will destroy the leads, and others will rise, which will give you a denser habit; or you may, without cutting back the leaders, shorten the side shoots, which will induce to a denser habit.

PRUNING AND TRANSPLANTING SHRUBS (Idem).—Now is a good time to plant evergreen shrubs, especially Hollies. Early autumn or late summer, especially if moist, is also a very favourable time; but we have been equally successful with spring planting, it being done when, or a little before, the shrubs are starting into growth. In transplanting no addition of fresh soil is necessary, that of the ground being good, but if unsuitable an addition of good loamy soil moderately rich is desirable. Pruning is best done early in the present month, but may be practised a small space. Just before or when new growth is being made is the proper time to prune.

LAWN WEEDY (R. A. P.).—The weed of which you sent us a specimen we do not recognise, it being much dried, having the appearance of a Lichen. It is now too late to top-dress, especially as you may not have material at hand. We should continue the guano sprinkling in moist weather. It assists the growth of the grass, and as this grows the growth of the weed will be diminished. We should mix in autumn one-sixth of lime with any vegetable refuse you may have at hand, or good rich soil, throwing it into a ridge-like heap, and in about six weeks turn it over, applying it to the lawn in February, and so as to just cover the surface. At the close of March rake thoroughly with an iron rake, and early in April remove by the same means any rough part of the compost, picking-off any stones, and roll thoroughly.

ROSE MILDEWEED (B. B.).—Syringe the plant with a solution of soft soap, 2 ozs. to the gallon of water, and whilst wet dust the infested parts with flowers of sulphur. It is due to the dull and moist weather we have until recently experienced. Brighter weather and more air will no doubt free you of the mischief.

GRAVEL PATH WASHED BY RIVER (E. L. O.).—The best thing would be to have the path remade, forming it of asphalt, which is made as follows:—Take two parts of very dry lime rubbish and one part coal ashes, also very dry, and both sifted fine. In a dry place on a dry day mix them, and leave a hole in the middle of the heap, as bricklayers do when making mortar. Into this pour boiling hot coal tar; mix, and when as stiff as mortar put it down 8 inches thick to form the walk. The ground should be dry and beaten smooth, in your case removing the gravel to that depth, or if not too high placing it upon it. Sprinkle over it finely-sifted gravel, and when cold and stiffened so as to bear a roller pass a light one over it, by which the gravel will be embedded in the asphalt. In a few days the walk will be solid and waterproof, no weeds growing upon it.

GRAPEV SPOTTED (I. T.).—The berries are affected with the spot, an ulceration usually caused by a deficient supply of sap. Place some thoroughly decayed dung over the roots, water regularly with tepid water, and cut out the spotted berries.

ANTS IN CAMELLIA POTS (J. H. K.).—Sprinkle Scotch snuff thickly over the surface of the soil every day until they disappear.

FUNGUS ON CUCUMBER PLANT (K. E.).—It is a fungus frequent on decayed wood, and was imparted to the plant from the soil. If a layer of sand about an inch deep is placed over the surface it prevents such inconveniences.

PAMPAS GRASS TRANSPLANTING (An Irish Subscriber).—You may divide the plant and transplant the sections now.

INSECTS IN BORDERS (B. H.).—The insects found in your border, manured and fed with slops, are the pupae of some two-winged fly, which it is impossible to determine in their present state. The specimens were smashed. If you wish for more precise information please send more better packed, and we will endeavour to rear them to the perfect state.—I. O. W.

NAMES OF PLANTS (J. R.).—The Ferns were too dried-up and faintly to be identified. (C. B. G.).—It is *Myosotis dissitiflora*. We compared it with a

bed of the true sort, and except in the colour of the flower, which is not material, it is identical. You should send in a small box; the flowers were pressed quite flat. (G., Downpatrick).—We cannot name plants from their leaves, flowers must be with them.

POULTRY, BEE, AND PIGEON CHRONICLE.

LAST YEAR'S COCKERELS.

WE suppose that nearly all who go in for breeding fowls to any extent find at the end of the autumn that they have a lot of superfluous cockerels, and do not know what to do with them. We think there are many of our fresh hands, who are but as yet young in the craft, that then want to part with these birds at any cost. They fill up the runs and get in the way of the growing chickens, or break through their bounds and appear in forbidden places, worrying the hens, and altogether getting terribly in the way. So, perhaps, these cockerels are offered for sale at ridiculously low prices, or are made into soup and used in the kitchen. Now, many of these birds are really the birds which make the winning two-year-old cocks. We would recommend great care being taken in weeding out these cockerels. So many of our young hands fancy because such birds never won a prize in their youth that they will not in time to come. No idea can be more deceptive, for over and over again we have noticed that the best two-year-old cocks are the birds which as cockerels were nothing very grand. We should state that we allude to Dorkings, Cochins, Brahmas, French, and Polands more especially.

Very rarely have we noticed that those cockerels (especially in Cochins) which make such a sensation in their first year come much to the front after their moult, and their places are filled in the second year by birds which, though they were perhaps of the same brood as the winning chickens, were looked upon then as "ugly ducklings," and ran risks of being eaten or sold cheaply. The old hands know better, and can often spot a bird which is to make the winner in his second year; but the amateurs, for whom we especially write, are not up to the full knowledge of breeding, and so repeatedly make away with valuable birds. We did it ourselves when we began, and we can well remember selling a late cockerel many years ago for 15s., which after his moult came out a winner over and over again at good places. The best of this case, however, was that the purchaser expected for 15s. to get a show bird then and there; so when the bird came he wrote back indignantly, saying a "weed" had been sent which was not worth 2s. 6d., and we then in our simplicity sent the man a sitting of eggs to induce him to keep the bird, as we had no room at home. It was consequently very mortifying to see the "weed" winning in the next year wherever he went. This, however, is annually happening to very many—we mean the parting with valuable birds because they do not then come up to the ideal standard which the eye tells them they should do.

We know of several breeders who go round at the Birmingham and the Crystal Palace Shows, thoroughly examining every specimen, to see if they can see there any bird which promises to make up into a good two-year-old, and if they find such they will buy them at any price in reason, and over and over again those birds are birds which do not in their first year even get a commendation card. Only a few days ago we read in a contemporary how Mr. Hinton had a Polish cockerel which never won a prize as a chicken, and yet after his moult became a notorious bird. And to quote a case which came quite under our own eyes: One of the first-prize Coochin cocks at the last Bristol Show was a bird which not only never won as a chicken, or looked even approaching the exhibition form, but was not thought even worthy of being bred from, though we confess we never did agree in this respect. Still this bird with plenty of good living thickened and filled out, and came out from his moult one of the best cocks of the colour of the year, and has never been shown without winning a first prize or cup.

We shall, perhaps, be asked to account for this. We can only answer that we conclude that exhibiting a young bird of a large or heavy breed to any extent weakens his constitution; or he is marked as a promising bird and a likely future winner, and is petted and pampered with meat or spiced foods, and so being forced-on in his early months he has not the vigour and constitution to thicken-out and develop, and come out from his moult large and bright in plumage. It is not always so of course, but we repeat that overshadowed birds and champion cockerels rarely make old cocks of note, and we look forward to next autumn to see how the Buff Coochin cockerel which has so often come to the front in the past season will then appear after his moult; that he will never make the bird that Mr. W. A. Burnell's is we feel pretty sure. But to return to last year's cockerels generally. Let us not discard any birds which, possessing in moderation the proper points, want only weight or size, for such birds when allowed to run together in a good run will amply repay all trouble and food expended upon them. We would recommend such birds not being bred from the first year, and being

well fed on good food twice a-day, allowing them to have as much as they will eat at a meal. They can live together, in a shady run if possible, all through the summer, and then about the early part of September, or even in the last weeks of August, they would do well if taken up and placed in little pens—4 or 5 feet square would do perfectly; and then when well fed three times a-day, and supplied with plenty of green food and dust, they will moult out well, and often make up into valuable two-year-olds. We mean that discretion must be used, and the birds selected, as we before said, which, possessing the required points, only need size and weight. Nearly every breeder has such birds, and two or three worthy of this treatment can generally be selected in January or February from the superior cockerels which are usually found in establishments of any size.—W.

COUNTRY NOTES.

THE writer has found, little by little, that there is something to be learned every hour; but knowledge is profitless and not worth acquiring if it cannot be disseminated and compared. Among the many readers of this paper how many there are who think they have nothing to communicate, when in fact they possess the information others are looking for. We may not look for another Gilbert White, but much of his charming book is founded on his observations of things belonging to natural history. In our country residences we have the book of nature open before us. When the snow is on the ground, and he "who loveth man, and bird, and beast" stores up his crumbs and teaches his children to feed those that lack, how pleasant to watch them—Blackbird, Thrush, Robin, Chaffinch, Greenfinch, Hedge Sparrow—all laying aside fear, inasmuch as so long as they pick only such places as they can at once swallow they remain and do so, but if they become possessors of a large piece they retire out of sight to eat it. So long as the severe weather lasts they will come regularly to meals, but when their natural food appears they come no more: it is the old story of the Raven let out of the Ark. But the winter is hardly at an end before we have the harbingers of spring. The Blackbirds and Robins are pairing; the Sparrows chase the feathers driven by the wind; the Rooks have strange palavers in high trees, where they do not mean to breed. Then begins the continual looking for the return of the migratory birds, with a view to noting the arrival of the first. The Chiffchaff, or Peewee as it is called in divers places, is seen; and being known as the forerunner of the Nightingale, likely places are visited night and morning in hopes of hearing him. Then the Cuckoo is heard, but must be heard cautiously. All rustics are not simple; and the rosy-cheeked, guileless-looking, flaxen-headed boy, who has been practising the "real wild note" in the lane where you heard it, and whence he is just emerging, touches his hat and says "he heard the Cuckoo just now in the lane." And then the Swallows, coming not only to their old haunts but to the identical spots, making their new nests where the ruins of the old ones mark last year's locality, and other birds.

Where this is being written a Robin is sitting in an open place, passed and looked at twenty times per day, distinctly visible, head and tail plainly seen. She is never disturbed, and has no fear. Not far from the spot, in the bend of a vine branch, a Flycatcher has built for years; she always returns to the same spot, and does not object to being watched while building or sitting. A pair of Blackbirds build in a thick shrub, and have done so for years. If you have a copse near through which there passes a stream go down in the evening, and choosing a quiet spot where you may see without being seen. Probably the first bird you will see will be a Kingfisher sitting on a bough overhanging the water. With its feathers a little "set up," its head brought back between its shoulders, its appearance would almost justify anyone in believing it was in a "brown study," and over the hills and far away. Not so. With lightning quickness it has left the bough, has dipped into a shallow near at hand and returned to its perch with a struggling minnow in its beak. If this latter should be too vigorous it then beats it against the bough, on which it sits till it is stunned and then swallowed. It then relapses into its old heedless attitude until it sees another minnow.

Hark! the scarcely audible rustling, and the small drops into the water. It is a Moor Hen and her family; they are making their way to that patch of weeds where they will find their food. See the pretty Dabchick coming from under the bank, her brood of little black dots looking as though as many humble bees had fallen into the water. Pages might be written on these things. The soothing note of the Wood Pigeons; the deep, rich, rolling song of the Blackbird seated in a bush; the bold challenging notes of the Thrush on the highest tree it can find; the sweet song of the Hedge Sparrow, the Whitethroat, the Redstart, and many others. They make pure and exquisite enjoyment. They open a book in which there is no sameness, and in which no one can look without learning. Many a one to whom it at first meant nothing has learned to leave it with regret.

Our flowers, can we say nothing for them? When coming home from church on one of those glorious sunshining sabbaths we have sometimes about Christmas, how sweet, on opening the garden gate, to be met by a wall of perfume! How sweet to watch one by one for the opening flowers! How grateful do we feel to the first, that by their appearance tell us the ice-bound winter is passing away, and spring is preparing her many-coloured garment—no laboured product, but growing in every hedge, in every field—the daffodil, the cowslip, the primrose, the violet. A little later the hedge roses with their self formed wreaths, the earth carpeted with bluebells, and later on flowers too numerous to mention. The lovely fruit blossom—the variously tinted pink wall fruit, the snowy white pear, and the more than lovely apple blossom. Our poultry—the earliest eggs and the earliest chickens; our capital arrangements to make the chickens time with asparagus, and our Ducks with peas; our varied experience, which applied to other things when we recollected how discouraged we were at our first failure, and how easily we afterwards overcame it; the luxury of being our own providers; the relish of our new-laid eggs in the morning; the joy of eating our poultry without buying it; the humanising nature of the pursuits to our children, and the happiness of having an employment they can share; and then, for we must come to an end, the diary of all these things, the comparison of one year with another, and above all the constant recurrence of that which we have noted before. The careful consideration of these things leads to more than an amusement. It is replete with serious lessons. It elevates the mind, and strikes us with gratitude when we find so many things, apparently insignificant in themselves, all capable of adding to our enjoyment and becoming the vehicles of pure and health-giving pleasures.—DUN.

FEEDING HENS FOR EGGS.

A HEN may be regarded as a machine for the production of eggs. If only enough food is given to just keep her alive—to just run the machine—no eggs, of course, can be expected, but usually there is no trouble in this direction. People do not often err in not giving their hens enough; it is more frequently the case that they give them too much, and of the wrong kind of food. If a machine is fed with too much raw material, more than it has capacity to utilise, it becomes clogged in its action and fails in its work; or if the wrong kind of material be supplied, the desired product will not be turned out. For a hen to produce an egg daily she must be well supplied with raw material out of which to make it. There must be albuminous substances, such as are found in meat and grain, out of which to form the white and yolk, and lime to produce the shell. Various kinds of grain contain these substances in different proportions, and this fact renders some kinds better adapted for the food of fowls than others. Wheat, wheat middlings, oats, barley, Indian corn, and buckwheat are good articles of food for hens if they are used alternately. If Indian corn were to compose the whole diet of hens they would be rendered too fat for laying purposes, but as a regular diet it is very valuable. About three times per week the hens will need some bits of meat to furnish more abundantly the albuminous element of the egg. Burned oyster shells pounded, old mortar, bone meal, or something similar should be kept by them at all times as material for shells. There should also be a constant supply of fresh clean water. Hens should never be permitted to eat snow. Snow water is highly injurious to them. Many persons give their hens all they will eat, and keep grain by them all the time. This is a bad practice. More hens are injured by overfeeding than in any other way. If a man eats all that he can he becomes to some extent incapacitated for exertion, and if he continues the practice his system will become deranged. So the hen, when overfed, becomes too fat and is good for nothing but to be marketed.

A simple rule in feeding hens is to give them as much as they will eat eagerly, but no more. As soon as they cease to eat with avidity, and will not run for the food, it should be removed. Fowls should be fed in this way three times a day—viz., morning, noon, and night. The morning's meal should consist of soft food of some kind, for during the night the crop and stomach should become empty. If whole grain is given, the fowl is obliged to grind it before she has any nourishment, and delay in the morning is injurious; therefore, it is best to have scalded meal and bran with mashed potatoes prepared. At noon a dinner of meal or grain may be given. At night, grain should be fed, so that the hens will have something substantial in their crops to last them through the night. In winter Indian corn is good to feed at night; in summer oats, wheat, or barley may be used. Wheat middlings are an excellent summer food, because of the flesh-forming elements contained in them—the requisites for producing eggs. Soft food should be mixed rather dry, so that when thrown upon the ground it will fall in pieces. When soft it sticks to the beaks to the annoyance of the fowls, and it is also liable to derange their digestion. Fowls require also a daily supply of green or fresh vegetables both summer

and winter. Chopped turnips, cabbages, or apples are suitable for winter. In summer, access to green grass is the best means of gratifying their wants. In order to be successful in keeping fowls their wants should be attended to with the same care and regularity that is bestowed upon other animals; the increase in the number of eggs will then be perceptible.—(*Kentucky Live Stock Record.*)

LEEDS PIGEON SHOW.

THE first annual Show, under the auspices of the Leeds Columbarian Society, was held in the Corn Exchange on the 5th and 6th inst. Considering the time when all or nearly all the best birds are engaged in breeding-lofts the entries were good, although in October or November we have no doubt but that the numbers would be quite double. This is one of the best halls in the kingdom for such a purpose, and would hold two thousand pens with ease; it is roomy, lofty, and light. It is seldom a show is seen with so few empty pens, half a dozen being about the number. The quality was good, and with a few exceptions the awards were well made, and these exceptions we will refer to hereafter.

Carrier cocks were first on the list, a grand Dun in fine order winning, as also the extra for the section. The second and third were Blacks, younger, but very promising. In hens a well-known hen, which was not in the best condition, was first, and as a Carrier she is all that can be desired; second a fair Black, and third a very poor Dun. Pen 16 (Beckwith) being in our opinion one of the best, and at least should have been second; the quality of head, style, and colour was grand (Black). Pouter cocks a fair lot, and hens better, but we did not like the first award, this being a Blue, thick in girth, with wings down and tail up. The second a Yellow, being in our opinion by far the best. Almond Tumblers were a good class. By far the best bird was lame, otherwise the awards would have been different. Other Tumblers were very good, in head properties especially. First an Agate, winning by that point alone. Second a Red Wholefeather, was our choice. Third also a grand Red. *Barbs* a nice lot, but the first a little watery in eye; second good, third very young, but a nice bird. Pen 87 (Mawson) might have been in the list with advantage. Foreign *Owls* were mostly Whites, and *Trumpeters* all of the foreign varieties. In *Dragoons*, Blue or Silver, the first and second should have changed places, the second most perfect in head and colour, with bars like straw. Any other colour, first Yellow, a grand bird; second Red, too flat-skulled for our fancy. *Fantails* were nearly all noticed. English *Owls* a large class; first Silvers, second and third Blues. In *Nuns* the winners were all Black and honestly shown. In *Swallows*, the first and second Blacks, most perfect in colour, and third Red. In *Turbits* the extra for section was given, but we did not like the awards, the first, a Red, being too long and thin in head, although we do not care for those of the Owl-headed type. Second and third, Yellows, were much better. In *Magpies* first was a Yellow, but the next bird, 244, was a much sounder colour. Second a Red, and third Black. Pen 250, a Red, was our choice. *Antwerps* mustered well. In Short-faced cocks every conceivable style of head and length was shown, and though all were good as Antwerps, few were true Shortfaces, the second, a Blue, in our opinion being most perfect in head. Long-faced cocks were very good in head, but mostly wanting in style and colour, but the best birds won. Medium-faced cocks were full better in style. In hens there were duplicate prizes, an afterthought, carried out in satisfaction of the wishes of the Short-faced breeders. Mr. Copeman's well-known Short-face was first for that variety, and first and extra for all Antwerps went to a Long-faced hen, a Red-chequer; but this was a mistake, the bird being too spindly and slovenly in carriage, while pen 811, the same owner, might well have been placed in that position. Three grand Duns were shown by Mr. Hopwood. Long-faced Tumblers were both good classes. In Bards and Beards first was a Blue Bald, and second a Red Beard. Mottles predominated in the next class. The first was a nice Yellow Mottle; second Red, but the next bird (Sylvester) was much better in colour. Most of the birds were noticed in the Variety class, and these were of the fancy varieties, the standard varieties being well provided with classes. The £10 points prize was won by Mr. Horner, as also one of the £5 points prizes, the latter being absorbed in the above, Miss Seaton securing the other points prizes. Turner's pens were used. The attendance was very bad.

CARRIERS.—Cock.—Extra and 1 E. Horner. 2 E. Mawson. *chs*, E. Beckwith. Hen.—1 and 2 E. Yardley. 3 E. Horner. *chs*, E. Beckwith. POUTERS.—Cock.—1 and 2 *chs*, E. Horner. 3 Miss F. Seaton. 4 W. Harvey. Hen.—1 E. Beckwith. 2 W. Harvey. *chs*, W. Nottage. E. Horner. TUMBLERS.—diamond.—1 R. O. Fielding. 2 H. Yardley. 3 W. & H. Adams. *chs*, E. Beckwith. E. Horner. Short-faced.—Any other variety.—1 R. O. Fielding. 2 W. & H. Adams. 3 E. Beckwith. *chs*, E. Beckwith. A. M. H. Sylvester. BARNS.—Extra 1 and 2 H. Yardley. 3 E. Mawson. FOREIGN OWLS.—1, A. Simpson. 2 E. Beckwith. 3 Miss F. Seaton. TRUMPETERS.—Extra 1 and 2 W. Harvey. 3 J. E. Spence. *chs*, E. Beckwith. DRAGOONS.—Blue or Silver.—1, 2, and *chs*, E. Woods. 3 F. Eastwood. Any other colour.—1 and 2 E. Woods. 3 H. Yardley. *chs*, E. Mawson. JACOBIANS.—1, J. Thompson. 2 and 3 E. Horner. *chs*, E. Horner. Miss F. Seaton. E. Beckwith. J. Gardner. J. Thompson. FANTAILS.—1, E. Horner. 2 E. Beckwith. 3 H. Yardley. *chs*, J. Walker. J. Lovemidge, E.

HORDER. ENGLISH OWLS.—1, R. Woods. 2, W. Bins. 3, J. Thresh. *etc.* H. Beckwith. NURS.—1, Miss F. Seaton. 2, W. Harvey. SWALLOW.—1, 2, and *etc.* E. Horner. 3, Miss F. Seaton. TUMBLERS.—Extra, 1, and 2, E. Horner. 3 and *etc.* H. Woods. MAGPIES.—1, Miss F. Seaton. 2, R. Beckwith. 3, E. Mawson. ANTWERPS.—*Short-faced*.—Cock.—Extra and 1, H. D. Gough. 2, Mrs. Entwistle. 3, Miss F. Seaton. *etc.* Mrs. Entwistle. Bradford; H. Yardley, Birmingham. *Long-faced*.—Cock.—1, 2, and 3, W. Ellis. 3 and *etc.* C. Hopwood. *he*, E. Mounsey. W. Ellis. C. Gamon. *Medium*.—Cock.—1, H. W. Cross. W. Ellis. E. H. Jennings. *etc.* H. P. Gough. Miss F. Seaton. W. Ellis. *he*, J. Ward. C. Jackson. T. H. Stretch. E. Mounsey. *Hen*.—1, W. Ellis. C. F. Copman. 2, Mrs. Entwistle. 3, F. Eastwood. Miss F. Seaton. *etc.* C. Hopwood. Mrs. Entwistle. W. Ellis. *he*, H. Jennings. C. Gamon. W. Ellis. Miss F. Seaton. H. Yardley. J. Gardner. LURELST BIRD FOR FLYING PURPOSES.—1, Miss F. Seaton. 2, E. Mawson. 3, H. Jennings. *etc.* F. Eastwood. W. Ellis. *he*, H. Jennings. W. Ellis. C. Gamon. TUMBLERS.—*Long-faced*.—Balds or Beards.—1, W. Ellis. 2, A. McKenzie. 3, J. Carrell. *etc.* W. Lund. *he*, J. Brown. H. Yardley. Miss F. Seaton. 2, W. B. Maplebeck. *Long-faced*.—any other kind.—1, J. Brown. 2, Miss F. Seaton. 3, E. Horner. *etc.* E. Beckwith. *he*, J. Carrell. A. M. H. Silvester. 2, H. Yardley. Miss F. Seaton. ANY OTHER VARIETY.—1, W. L. Clark (Spangled Icel). 2, E. Beckwith. Sunderland. Extra 3, E. Beckwith. *etc.* H. W. Webb (Fribback). A. M. H. Silvester. (2), Miss F. Seaton. *he*, H. W. Webb (Archangel). Miss F. Seaton. E. Horner. H. Yardley (3). Col. Child (4). *etc.* E. Beckwith. H. Yardley. ANY VARIETY.—Not to exceed 50. —1 and 2, Miss F. Seaton. 3, E. Horner. *etc.* E. Beckwith. *he*, Hickman and Jacks. T. Holt. B. Woods. *etc.* E. Beckwith. E. Horner. Pair.—Not to exceed 50. —1, H. Yardley. 2 and 3, E. Horner. *etc.* H. Yardley. *he*, E. Beckwith. Miss F. Seaton (2). *etc.* E. Beckwith.

The Judges were—Mr. Rule the Carriers, Pouters, Short-faced Tumblers, Barbs, and Trumpeters; Mr. Allsop the others except the Antwerps, which were judged by Mr. Hawley.

ARTIFICIAL BEE BREAD.

A few days since I received a private letter containing the following advice, "You should try the artificial pollen—Symington's Pea Flour—strongly recommended by Mr. A. I am doing so, and my bees are taking it in quite largely, as dusty as millers. It is sold by druggists and grocers." The advice thus given deserves a passing notice; for, though well meant and offered in a friendly spirit, is about the worst and most foolish that one bee-keeper could give to another. Why should any British bee-keeper give his bees artificial pollen? Why should the combs of a bee hive be clogged and cloyed with rubbishy pea flour? In Great Britain and Ireland bees carry into their hives far too much natural pollen from flowers. They are often, if not always, hindered in their work of hatching brood and storing honey by an over-accumulation of it. I emphatically assert that it is in almost every hive very cumbersome to the bees during the summer months, and in the time of harvest or honey-taking it is quite a nuisance to the bee-farmer. Why then recommend the use of artificial pollen? It is not for me to attempt to answer this question; but a more unnecessary article was never offered for sale before. Why do the bees carry into their hives that which will impede their action and progress? In answer to this question I have to say that bees are both miserly and provident by nature and habit, very often storing up more honey and bee bread than they need. The superabundance of honey can be removed for their advantage and that of their owner; but a superabundance of pollen cannot be removed, but remains an obstructive incumbrance in the hives.

In combs built from sugar syrup at the end of summer when pollen-gathering is nearly over, bees are never hindered by want of pollen. They thrive and prosper uncommonly in such combs (and hives), because they do not contain too much of it. The chief reason why we prefer stocks with young combs is the fact that old combs invariably become cloyed with pollen in their central or breeding portions. Our system of management enables us to have nothing but young sweet combs in our stocks. But whichever mode of management be adopted and practised, no artificial bee bread should be used. The use of it will in a measure stultify the efforts of bees and their owners.

If our inventive friends would only tell us how to prevent bees from gathering too much pollen we would be greatly indebted, and, moreover, consider them the greatest living benefactors of apian science.—A. PATTISON.

TWO QUEENS IN ONE HIVE.

The evidence that your correspondent "H." offers that he has two queens in one hive is very weak indeed. A cross-bred or mongrel Ligurian queen will produce bees varying from perfectly brown to nearly as brilliantly coloured as pure Ligurians, which is no doubt the case of the queen in his hive. The term "H." uses, "hybrid," is not correct, the Ligurian and the English bees being simply varieties of the same species, the cross being no more hybrid than chickens of a Dorking cock and Spanish hen.—JOHN HUNTER, *Eaton Rise, Ealing.*

OUR LETTER BOX.

FOWLS PARTIALLY FRATELLENESS (L. J.).—We are sorry to say your complaint is become a very common one. It is as a rule met with only in birds that are in confinement. It arises partly from idleness and mischief, partly from a disarranged, if not a diseased, state of body. The positive cure

is to give them their liberty. Pains-taking and diet may prevent them from adopting the habit, but after they have begun nothing but thorough liberty will cause them to abandon it. We believe we can advise you beneficially as to diet, and we attribute many of the new diseases to which fowls are now subject, to spiced and stimulating food. Give your fowls in the morning ground oats or barley meal slaked with water. Let them have the house scrape at midday. If you cannot give them their liberty supply them with large sods of growing grass cut with plenty of fresh earth. Give them green food, lettuce especially. They are fond of turnip greens; but cabbage is the worst of all green food. Let the evening meal be a repetition of the morning. Sometimes all this annoyance is caused by one hen. Watch for her, and take her in. It is useless to apply anything to the bare spots to protect them, as it is only the feathers they seek. The growth of feather may, however, be favoured by the application of sulphur ointment. The plague of this is, that although the habit begins with one hen, the others submit cheerfully, and stand to be denuded of their plumage without an effort to escape from the visitation. Spanish are the most prone to it.

HONEY BOX (W. A. B.).—Do we understand you to mean that you have two boxes full of comb empty of bees, and on the top of all "a not very strong stock of bees?" If so we would advise you at once to reverse operations, and put the bees at bottom. You should take away both the other boxes till they are wanted for swarming or for honey, replacing them after the bees have multiplied sufficiently to require additional room.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Barom. corrected and reduced	Hygrom- eter.		Direction of Wind.	Temp. of Air.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1876.										
April.										
We. 5	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
	30.506	53.0	53.0	W.	45.8	60.1	47.5	74.7	83.7	—
Th. 6	31.429	58.8	51.6	N.E.	47.0	63.7	50.2	90.8	83.0	—
Fri. 7	30.371	53.4	49.2	N.E.	45.1	58.8	49.4	107.3	83.0	—
Sat. 8	30.092	54.7	50.3	S.E.	45.5	71.1	41.0	115.0	83.0	—
Sun. 9	29.867	54.8	49.0	S.W.	49.0	60.8	46.4	106.3	89.3	0.067
Mo. 10	29.540	53.3	49.5	S.W.	49.0	51.1	49.6	84.7	47.7	0.570
Tu. 11	29.599	41.1	36.1	W.	47.0	49.1	33.3	101.4	80.9	—
Means	30.058	52.3	48.5		47.8	60.3	45.3	97.1	82.7	0.457

REMARKS.

- 5th.—A dull, heavy day, scarce any sun, but no rain.
6th.—But little sun, though still without rain.
7th.—Bright morning; a very beautiful day, but not quite so warm.
8th.—A splendid day and moonlight night, quite a spring day; wind rising at night.
9th.—High wind in early morning, but very fine by 9 A.M.; fairly bright till 2 P.M.; a short shower about 4 and again about 7; wind rather high all day, but very strong in the night.
10th.—A blustering morning, stormy, wet, and disagreeable both day and night.
11th.—Windy and much colder, slight fall of snow at noon, bright at times but sometimes very dark, wind went down soon after noon.
Early part of week quite warm, equally on 9th and 10th, afterwards much colder.—G. J. SYMONS.

COVENT GARDEN MARKET.—APRIL 12.

THIS being Passion-week the supply of forced fruits and vegetables is in excess of the demand, and will be till after the holidays. St. Michael Pine Apples continue to arrive in good condition, but are not realising high prices.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	0	0	Mulberries.....	lb.	0	0	0
Apricots.....	dozen	0	0	0	Neotaries.....	dozen	0	0	0
Cherries.....	lb.	0	0	0	Oranges.....	100	0	0	0
Chestnuts.....	bushel	12	0	0	Peaches.....	dozen	0	0	0
Currants.....	1 sieve	0	0	0	Pears, kitchen.....	dozen	0	0	0
Black.....	do.	0	0	0	dessert.....	dozen	8	12	0
Figs.....	dozen	0	0	0	Pine Apples.....	lb.	1	0	4
Fluberts.....	lb.	0	0	0	Plums.....	1 sieve	0	0	0
Cobs.....	lb.	0	0	0	Quinces.....	bushel	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	10	0	25	Strawberries.....	oz.	6	1	6
Lemons.....	100	6	0	12	Walnuts.....	bushel	4	0	10
Melons.....	each	0	0	0	ditto.....	100	1	6	2

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	4	0	6	Leeks.....	bunch	0	4	0
Asparagus.....	100	6	0	10	Mushrooms.....	potl	1	0	2
French.....	bunch	20	0	0	Mustard & Cress punnet	0	2	0	0
Beans, Kidney.....	100	1	8	2	Onions.....	bushel	2	0	0
Beet, Red.....	dozen	1	8	0	pickling.....	quart	0	6	0
Broccoli.....	bunch	2	0	0	Parley.....	doz. bunch	0	0	0
Brussels sprouts 1 sieve	2	0	0	0	Parsnips.....	dozen	0	0	0
Cabbage.....	dozen	1	0	2	Peas.....	quart	0	0	0
Carrots.....	bunch	0	4	0	Potatoes.....	bushel	2	6	0
Capiciums.....	100	1	6	2	Kidney.....	do.	8	0	0
Cauliflower.....	dozen	1	0	4	New.....	lb.	0	9	2
Celery.....	bunch	1	8	2	Radishes.....	doz. bunches	1	0	6
Coleworts.....	doz. bunches	2	0	0	Rhubarb.....	bunch	0	6	1
Cucumbers.....	each	0	4	1	Salsify.....	bunch	0	9	1
Endive.....	dozen	1	0	2	Scorzonera.....	bunch	1	0	0
Fennel.....	bunch	0	8	0	Seakale.....	basket	1	6	2
Garlic.....	lb.	0	6	0	Shallots.....	lb.	0	8	0
Herbs.....	bunch	0	8	0	Spinach.....	bushel	4	6	0
Horseradish.....	bunch	4	0	0	Tomatoes.....	dozen	0	0	0
Lettuce.....	dozen	0	6	1	Turnips.....	bunch	0	4	0
French Cabbage.....	1	6	2	6	Vegetable Marrows.....	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	APRIL 20—26, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.		Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	m.	s.		
20	TH	Linnean Society at 8 P.M.	60.8	55.1	47.7	4	55	7	5	8	42	2	44	26	1	15	111	
21	F		59.5	57.2	48.8	4	52	7	6	8	58	3	44	27	1	27	112	
22	S	Royal Botanic Society at 3.45 P.M.	59.0	57.4	48.2	4	50	7	8	4	4	5	5	28	1	39	113	
23	SUN	LOW SUNDAY.	59.2	56.8	48.0	4	48	7	10	4	16	6	31	29	1	50	114	
24	M	Antiquaries (Anniversary), at 2 P.M.	58.8	56.0	47.4	4	46	7	11	4	31	8	1	0	2	1	115	
25	TU	Manchester Auricula Show.	59.6	57.2	48.4	4	44	7	12	4	50	9	34	1	2	12	116	
26	W	Royal Botanic Society—Second Spring Show.	58.0	56.4	47.3	4	42	7	18	5	18	11	8	2	2	23	117	

From observations taken near London during forty-three years, the average day temperature of the week is 59.0°; and its night temperature 57.5°.

From observations taken near London during forty-three years, the average day temperature of the week is 59.0°; and its night temperature 57.6°.

SEED AND SEED-SOWING.



GOOD seeds of the best kinds with timely and careful sowing contribute very materially to successful culture. The good seeds are to be obtained with a tolerable degree of certainty from every respectable seedsman, but the sowing is unfortunately but too often so badly done that failure is inevitable. Many and repeated failures have taught me how to exercise the necessary caution and care to ensure success; I have been several years

learning the lesson. Other persons may be better able to steer clear of rocks and shoals than I have done, but mistakes occur so easily that a danger signal or two cannot but prove useful.

A short time ago I was asked to recommend a good seedsman. I replied in true Scotch fashion by another question—"From whom did you have your seeds last year?" A firm of the highest respectability was named; and my remark that they were perfectly reliable people, fully alive to the importance of sustaining their high reputation by selling only first-class goods, was met with the exclamation, "Oh! but we had hardly any good vegetables last year; Peas only twice," &c. The seedsman was therefore evidently considered blameable—a convenient and natural conclusion, perhaps, but not a very just one. Now, in this instance I happened to know that the evil arose from a poor soil managed by a factotum—a very useful and indispensable class of men, but who cannot fairly be expected to penetrate very deeply into cause and effect in its relation to what they do, and are, therefore, very liable to conclude in perfect good faith that failures, arising simply from their own mismanagement, are referable to bad seeds. Such ignorance is manifestly mischievous and hurtful to all concerned, let us try to dispel it.

Neither a close heavy soil nor a light poor soil are suitable mediums for the vegetation of seed. Enrich both by repeated heavy dressings of manure and leaf mould, and render them open and free by an abundant admixture of some hard gritty substance, such as stone chip-pings, shattered brick, or, best of all, coal ashes; then by digging in autumn and exposing as much as possible to the action of frost you will find the ground in readiness for the seed on the first fine day of spring. This is a thorough and efficient method, preferable to any other, but unfortunately it is not always practicable, makeshifts having to be resorted to in many instances, and when such is the case "little and good" rather than "much and bad" should be our motto. Instead of scattering broadcast such few fertilisers as our limited means can command we must concentrate them in drills, trenches, and stations, so as to have the requisite amount of nourishment within reach of the earliest roots which spring from the seed as it vegetates.

Take, for example, a row of Peas. Now, the Pea is a deep-rooting gross feeder, with a free, quick, succulent growth: why, to sow the seed of such a vegetable in a

poor inert soil is ridiculous—it is sheer waste, and is quite certain to cause vexatious disappointment, and yet there can be no doubt about its being done season after season, whereas we have only to make a trench a foot deep and wide, laying the excavated soil along the sides, replacing about two-thirds of it with dung, leaf mould, or other decayed vegetable matter, or in fact any substance which appears to us to be sufficiently nutritious for the purpose, then mixing enough of the displaced soil with it to fill the trench. We next draw a deep drill along the centre, deeper than is absolutely necessary for the seed, which is much too precious to be left to take its chance in such a rough mixture, so we look about us for some old leaf mould, wood or coal ashes, fine charcoal, shattered brick or stone siftings, making the best mixture of any of these we can find, scattering an inch or two of it along the bottom and sides of the drill; then comes the seed with a covering of the same fine gritty substance pressed gently down with a spade, and the work is done so well that we may feel certain vegetation and a free robust growth will promptly ensue. We have thus laid the foundation of success, but we must not forget the risk which the seed runs of spoliation from mice and birds.

I am not afraid of the ravages of snails in such a quick free soil; it is in a cold, heavy, inert soil that they do so much harm. There are some favoured spots where mice and sparrows are so scarce as to be comparatively harmless, but in most gardens these pests are so rampant that they cannot be ignored. I have a lively remembrance of the keen mortification of a certain worthy amateur who, after incurring the expense of wire guards, lost the whole of his first sowing of Peas from mice which were screened from observation by the guards. When protection is necessary I much prefer sheets of glass laid singly end to end along each row, with a wire stretched over them to prevent the wind blowing them away, letting the plants lift the glass as they rise above the soil, thus starving out the mice and tantalising the sparrows. Failing the glass we may resort to pieces of slate or roofing tiles, being careful, however, to remove them immediately the Peas reach the surface, and using wire guards or netting to keep off the birds; the seed vegetating under such opaque coverings quite as readily as it does under glass.

For smaller seeds, such as Cauliflowers, Brussels Sprouts, and kindred subjects, make the drills deeper than usual to afford space for an inch or two of the same gritty substance as was used for the Peas, enveloping all the seed in a precisely similar manner; also taking especial care to put netting over the seed beds a few days after sowing; birds' eyes are keener than ours, and they will detect the sprouting growth long before it is visible to us. I have known sand to be used very successfully for covering seed, but I hesitate to recommend it, for in ironstone districts the whitest sand usually contains sufficient oxide of iron to destroy the seed germs as they start into activity; sometimes the young growth will force its way through the sand, but even then the delicate cuticle of the stem suffers so much from contact with the sand that the plant soon fails.

For Carrots, Parsnips, Beet, and Salsafy it has been shown long ago that holes filled with fine rich gritty soil for each root insures a crop; the plan is a tedious and laborious one which we would gladly dispense with at this busy season of the year, and is only recommended when failure is inevitable without it.

A greater amount of success attends the general culture of flower seeds, because many of them are raised under glass in pans; but even with this advantage a little extra care makes all the difference between success and failure. Very minute seeds, such as of Gloxinia and Begonia, answer best if sown upon a damp surface and left to vegetate uncovered with soil; but then excessive evaporation must be checked, for if they are exposed to the sun or any parching influence watering will be necessary, involving much risk of washing away the seed; moreover, to suffer such seed to become very dry just as vegetation takes place is to destroy it. The best plan, therefore, is to place the pans in a genial temperature, and to exclude light from the seed till growth begins. Formerly I used pieces of muslin, but now prefer sheets of thick paper placed upon the tops of the pans immediately after the seeds are sown, and thus avoid all risk of failure.—EDWARD LUCKHURST.

A LOOK ROUND THE KITCHEN GARDEN,

APRIL 11TH.

A WEEK'S fine weather has wrought a marvellous change here, but still the work is woefully behind, and unless we have considerably better weather than we have been favoured with for the last few months I shall not be anxious to see many visitors. But readers of the Journal are an exception, and I purpose taking them into my confidence and tell of things as they are.

Borecoles are the most conspicuous vegetables at present, and, although there is no particular skill required to cultivate them, they are an important crop. The ordinary Dwarf Curled is past its best, but Veitch's Dwarf Late Green Curled will last some time yet. Asparagus Kale has just had its main heads used, and it will send up an abundance of successional sprouts of good quality till Cabbages are plentiful.

Winter Spinach is still abundant; the summer sort is only just sown. By-the-by, this last-named is as hardy as the former.

Of Lettuces on a south border 6 feet from the wall and otherwise unprotected, sown the last week in August, and planted during September, Tom Thumb is turning in rapidly; a few are already fit for use. Hammersmith is about a fortnight later, and Bath Cos later still. The first sort is planted 6 inches apart every way, the second 9 inches, and the last-named a foot. These are followed by others of the same sowing left in the seed bed all winter, to be planted in a more exposed situation, which in their turn will be succeeded by Early Paris Market, Cabbage Lettuce, and Bath Cos sown in a Potato frame at the end of February.

Seakale and Parsnips (Hollow-crowned) were sown 25th of March in rows 18 inches apart. Onions the same day, 15 inches apart, a few White Spanish for autumn and early winter use; but the main crop is Yellow Danvers, which is the best Onion I am acquainted with, being equal to White Spanish in size and quality, and keeping as long as any light-coloured Onion. Red or brown Onions are not looked on with favour by French cooks. I had one season for trial a packet similar, if not identical, with White Spanish, under the name of Improved Reading, the very name of which when the seed was sown frightened my vegetable man, who said very firmly, "This narra-good for I to take red uns to thick man in the kitchen if 'em be 'proved.'" Onions grow exceedingly well on our heavy soil without any special culture. Silver-skin, Two-bladed, or some other small variety is sown thickly in a bed of poor soil early in May for pickling. Globe Tripoli, for standing the winter, is sown in the middle of July.

Asparagus was planted last week 2 feet apart by 1 foot on the flat, without beds or alleys. I prefer one-year-old plants, and to be planted just when they have commenced growing. Plants four and five years old are just beginning to shoot. I have had the surface pricked up with a fork, and it is intended to give it a sprinkling of salt.

Peas sown 24th of January outside are a miserable failure. Those sown on turves in a frame and afterwards planted are just forming tendrils and require sticking. The sort is William the 1st. I tried Alpha, which is also a good Pea, but found it too delicate. Round hard bullet-like Peas are not

tolerated now Peas of good quality can be had just as early. G. F. Wilson in two successions has also been sown on turves. The first batch is 2½ inches high, and the second just through the soil. I still depend on this and Veitch's Perfection for the general crop; and as there is a week or ten days' difference in the time of their coming into use, I take a leaf out of Mr. Douglas's book, and sow the two sorts at one time to make doubly sure of keeping up a supply. It is of no use here to sow these sorts later than the third week in May; they then last well into October, and at that time of the year the birds are exceedingly troublesome, and we cannot keep a pod without netting. These sorts with me grow 5 feet high, and are expensive to net. Omega only grows 3 feet, and is the best late Pea I know. It is sown the first week in June. Early and late Peas are grown in rows 4 feet apart; G. F. Wilson and Veitch's Perfection 9 feet apart in rows running north and south, and with two rows of Potatoes or Cauliflowers between. I have Dr. Maclean on trial.

Cauliflower, Early London, sown the first week in September, and the plants afterwards pricked out where they could be protected a little with a frame during midwinter, and transplanted to hand-lights in February, are coming on well, and will be fit for use next month close on the heels of Dalmeney Broccoli. These will be followed by others of the same sowing planted later on a south border and sheltered a little with branches, which again will be succeeded by others sown in the indispensable Potato frame in February. In addition to the sort named, Walcheren and Autumn Giant were sown here, as also were Brussels Sprouts (which can scarcely be sown too early), and Red Cabbage.

Scarlet Runners have been sown three in a good-sized pot where they can be protected. These will be kept hard pinched till they grow into the form of Gooseberry bushes, and when planted-out they will bear immediately, probably a month before the dwarf Beans outside.

Cabbage, Wheeler's Imperial (of Geo. Wheeler), is nearly fit for use. We sow as nearly as possible to St. Swithin's day, and plant out in September.

I have not yet passed half round my kitchen garden, but I will write again; I have some forcing houses and flower borders to see to.—WILLIAM TAYLOR.

AZALEAS IN THE OPEN AIR.

As the planting-out of Azaleas has been alluded to, it may neither be uninteresting nor unprofitable to note the system that is adopted for their culture in the Belgian nurseries. It is in Belgium where these plants are increased and multiplied to a greater extent than in any other country. From the nurseries near Ghent, Azaleas are sent by hundreds of thousands during each succeeding autumn to almost all parts of the civilised world.

The plants usually exported from Belgium are familiar in all the principal markets in England. These plants are grafted on stems 6 inches to a foot high, and have heads of about the same dimensions in diameter. The foliage is of the most healthy character, the growth is robust yet sturdy, and the flower buds are well set on every shoot.

Now these plants are all, or nearly all, so produced by planting them out in the open air, taking them up in the autumn, some being potted; but by far the greatest number are mossed—that is, moss is tied firmly round their roots, and they are so sent by steamer not only to the different parts of Europe but also to America. These plants on arrival need only to be potted in any light soil; and if they are introduced into gentle heat, and are duly attended to by syringing and watering them, they will unfold their flowers almost with the same certainty as bulbs. None can deny the effectiveness of these Azaleas; and although it is true that the plants seldom flourish satisfactorily after flowering, yet they are sold so cheaply that they are worth their cost in their first full display. By no other system than planting out could the plants be grown so quickly and sold so cheaply. Those plants, however, which are potted in the nurseries immediately on being taken up, establish themselves in the most satisfactory manner; and if this is so in Belgium why should it not be so in England?

The most extensive plantations of Azaleas that I have seen were in the nursery of Mr. Van Houtte at Ghent. The plants, when I saw them in September planted out in the open air, might be numbered by thousands, the Azalea beds occupying apparently about an acre of ground. The plants are not

indiscriminately planted in the natural soil of the nursery, but the compost is specially prepared, and is evidently such as Azaleas delight in. It is composed principally of leaf soil and sand—a compost which possesses unusual properties of growing these and other plants remarkably quickly. The Azalea beds are about 4 feet in width, the bottom of each sloping gently to the centre, where drain pipes are laid having outlets to a drain running across the lower side of the ground. The soil is placed in the beds about a foot deep, fresh soil being used every year, and the plants are planted out towards the end of May and are removed in September. They are duly attended to by watering, and they grow more healthy and cleanly than do plants having the best attention in pot culture. The plants are potted in the same soil in which they have grown in the beds, and in three weeks fresh rootlets permeate the mass of soil in the pots and the plants are quickly established. Some plants which I turned out of the pots within a month of their having been potted showed a compact mass of active healthy roots, and the plants were in perfect order for flowering.

Now, we have not that wonderful leaf soil in England, and our climate may be somewhat different to that of Belgium, yet if we made the most of our means, and bestowed the same care on the preparation of the soil and the after-cultivation of the plants as our neighbours do "over the water," we might restore the lost vigour of many plants more quickly by planting them out than by potting them; and that Azaleas are amenable to this treatment is a subject worthy of more consideration than it has yet received.

But while admitting the healthiness of the Belgian Azaleas which are grown as above described, and acknowledging their usefulness for immediate decorative effect, I am nevertheless convinced that where permanent plants are required for specimens, the plants which have become established, even if not raised in English nurseries, are far more reliable and in the end cheaper than are the Belgian plants. These latter plants miss their leaf soil, or something else that would seem to be necessary to their prolonged vigour, and many of them after flowering either die outright or become unhealthy and unsightly. The plants, however, are cheap enough to kill, each costing little, if any, more than a Hyacinth, and the first display alone is worth the cost incurred.

I have tried to restore these plants after flowering; and the plan that I have found to be the best was to treat them as nearly as possible as they had been treated before—by planting them out in light soil in summer, syringing and watering them regularly, and potting them again in the autumn. By that primitive plan I have restored to good health many a sickly Azalea and Camellia, as well as other greenhouse plants which I cannot now enumerate.—F. H. S.

TWO-DAY ROSE SHOWS.

UNTIL quite lately a Rose show extending over more than a single day was a rare event; but there seems now a considerable danger of this objectionable practice becoming common. Now, I think that it will be conceded that the proper objects of a Rose show are (1) the encouragement of the cultivation of that flower, and (2) the entertainment and instruction of the public. A show established as a speculation, and having for its object simply the financial success of the promoters, cannot, I think, be considered worthy of support. The persons, therefore, who ought principally to be consulted are the exhibitors, who are necessarily the backbone of the concern, and the public who support it.

I think that I can show that it is the interest neither of the exhibitors nor of the public that a Rose show should be prolonged beyond the first day. From an exhibitor's point of view I object that it is a considerable increase of expense, for the exhibitor has, like Mr. Gladstone, only "three courses" open to him: Either he must himself stop over the two days, or he must leave his man, both expensive; or he must trust to his boxes coming as best they can. In the last case he has the pleasure of paying the carriage, perhaps from some distant place, and including a journey across London; and he has no remedy if his boxes are injured or his tubes lost, as happened to me last year. The other very important objection is that he is debarred from other shows from want of his boxes. Not many can afford to follow the example of a friend of mine, who, on finding last year that the second day of the Alexandra Show interfered with the Crystal Palace, merely ordered a second set of boxes to be made. All the great shows are

usually and quite rightly included within a period of fifteen days. This year they are—I think unwisely—extended to twenty days, and by the two-day system they are sure to clash with each other.

As regards the public, it is not fair to advertise the second day of a Rose show as if it were really worth seeing. Most of the Roses when presented to the judges at 10 a.m. on the first day of the show have been out about thirty hours, and it is not reasonable to expect that they can last beyond that day. Let us enjoy them in their prime, but faded blooms are a sorry sight.

"Augustus was a chubby lad,
Fat rosy cheeks Augustus had."

But we all remember that their rosiness was but shortlived. Roses on the second day of a show are not worth looking at. Even at the close of the first day and in the best boxes the blooms present a very different appearance from that of the morning. The heat of the exhibition room has been too much for them. A tent is more trying still.

Last year the Alexandra Park started a two-day show, and this year I regret to see that the Crystal Palace have followed in the track. The new show at the Westminster Aquarium is on the same principle. Now I want all exhibitors to take this matter into their serious consideration, and, if the matter appears to them as it appears to me, to unite in putting a stop to these two-day shows. What a union or general agreement among the exhibitors can do, the parody of a Rose show called the National held at South Kensington last year sufficiently proves.—T. H. G.

SOIL FOR VINE BORDERS.

PROBABLY no subject connected with the gardener's duties has received more attention than the nature of the soil best suited for the production of Grapes. If any point in practice can be said to be "thrashed out" surely it must be the matter now alluded to. Turfy loam in connection with this subject has become a hackneyed threadbare term. Perhaps nine out of every ten gardeners, if solicited to name the soil best suited for the growth of Vines, would name "light turfy loam" as the staple. But the word "light" is a relative term which is apt to be misinterpreted; and it is to be feared that, by selecting loam described in the above indefinite terms from the pastures in light and dry districts, the crops of Grapes have been "light" as well as the soil producing them.

In clay and strong-land districts the term "light" cannot easily mislead. The light loam from such a district is regarded as "strong soil" by the dwellers in sandy or light-land localities. An example will make the matter plain. A few years ago a gentleman residing in a light-soil or "barley" district was making new Vine borders. He sought for "light" turfy loam according to the usual recipe. It was represented to him that the heaviest loam that he could find in the parish would be light as applied to the Vines. That was an assertion which he could not understand, but the correctness of which he was disposed to test. He had selected his light turfy loam and carted it home for his borders; but decided notwithstanding to make only one border with it, and seek the heaviest loam that could be obtained in his district for the other border. He did so. The borders were made, one of light, the other of heavy soil. For the first year or two the Vines in the light border grew the most freely, but they were overtaken by the Vines in the stronger soil, and the crops from the latter have been much better, and will continue to be so, than the crops produced by the lighter soil.

Light turfy loam from sandy districts may safely be regarded as too light for Vines. It grows them freely for a year or two until the vegetable matter—the herbage and roots—has decayed, and then the Vines lose their early vigour. The soil is then deficient in nourishment as well as in "holding" properties, and the roots strike through it in search of that which they cannot find. Preferable to soil of that character, which fosters a premature pampered growth, is non-turfy sound garden soil with a liberal admixture of bones and rich surface-dressings of manure. In such soil, if the early growth of the Vines is not so rapid as in the light turfy loam, they will eventually and over a longer period of time produce larger crops of superior quality than the Vines in the above-named popular and dainty compost. I fear that light turfy loam as applied to Vines is delusive. The term is deceiving to the many Grape-growers who have not a thorough appreciation of the nature of soils both chemically and mechanically. Many

soils included in the above term have not the sustaining power necessary for the support of such a permanent crop as they are selected to produce and to sustain.

It is not in light soil or barley-growing districts that the best Grapes are to be found, but in the heavier soil known as "wheat land," for in that Vines grow the strongest and continue the longest.

The pastures in some districts are noted for the fineness of the grass: it is dwarf, wiry, and abounds with Daisies. It will feed sheep tolerably well if not too heavily stocked, but will starve bullocks. Turfy loam from such pastures is light, too light for Vines. It will support them in their early stages of growth, but the "heart" is soon taken out of it, and the Vines languish just at the time when they ought to be arriving at their best state. Turfy loam from such pastures cannot, unaided, perfect Vines of sound constitution and possessing inherent vigour. Good Grapes are only produced in such soil over a series of years by ungrudging manurial applications applied to the surface of the borders annually, and copious waterings in the growing season.

A soil far more reliable for the production of Grapes is to be found in pastures where the herbage is more robust, and where "Buttercups" predominate over Daisies—pastures which are not notorious for growing lean mutton, but which are celebrated for producing fat beef. It is in such districts where Vines flourish, and it is from them alone that light turfy loam may be selected with safety. In such localities the nutritive qualities of the soil are sufficient for the wants of Vines, and the principal care must be devoted to the mechanical condition of the borders in which the Vines are intended to be grown. In localities noted for fat beasts and Buttercups lime rubbish and charcoal may be used in the Vine borders freely, but on poor sheep-grazing and Daisy lands lime rubbish had better be buried anywhere than in the Vine borders. Charcoal may be used and bones at the rate of two bushels and more to every ton of soil, but lime rubbish in such borders can serve no useful purpose. Vineries are springing up in all directions, and especially in the environs of towns and attached to villa residences. Grapes are looked forward to with pleasant anticipations, and advice is anxiously sought as to the formation of borders. In some instances light turfy loam is carted from long distances when sounder and better soil is close at hand. Excavations are made, concrete laid, and drains are formed where such work is not at all necessary. Soil that will grow good crops of Pears and Cauliflowers will grow sturdy Vines and excellent Grapes.

But why allude to the matter now? are not Vine borders made in the winter? True it is that they are generally made at that period, and it is for that very reason that the matter is alluded to on the approach of summer. The practice of selecting light turfy loam in sandy districts for the formation of Vine borders is not more erroneous than digging it and heaping it together in the borders in the cold winter season. I have seen turf carted into Vine borders when some of it has been encrusted with ice and the remainder soddened with wet; and what is more, have known the worst, but only natural results, accrue from that thoughtless practice. Borders thus made—that is, the surface of the ground pared in winter and piled in its icy-cold state 8 feet in thickness, are then, and for many months following, several degrees colder than the natural soil of the garden that has not been exposed to the weather and had the summer's heat extracted.

Soil undisturbed absorbs the heat of the sun slowly and regularly, and parts with that heat as slowly and steadily as it absorbed it. The earth's heat is the active agent in causing the emission and extension of roots, and the roots of plants are more susceptible of injury by changes of temperature than are the leaves and branches. In the summer the surface of the ground is the warmest and in the winter the coldest, the temperature of the earth at 1 foot to 2 feet deep being infinitely less fluctuating. Now, what a mistake to take the cold surface stratum and with it form a border unnaturally cold, and which the heat of two summers cannot restore to its normal state. Let the soil be of whatever nature it may, it is robbed of one of its greatest virtues if deprived of its heat, and this deprivation—this robbery—cannot be more effectually done than by skimming the surface of the earth in winter and burying the cold 2 to 3 feet deep. Why not store the heat of summer instead of the cold of winter? True, the Vine borders must not be made when the soil is heated to dryness. That would be going to the other extreme. There are plenty of opportunities of storing soil in a proper—that is, in a warm and

healthily moist state, and Vines, or any other trees or plants, will flourish better in such soil than if it had been stored under either of the extremes mentioned of being as "dry as dust" or as "cold as ice." It is because I have traced the unsatisfactory condition of Vines most clearly and distinctly to the borders having been made of icy-cold soil that I mention the matter at a season when such a flagrant violation of the laws of nature may be easily avoided.

My experience in making Vine borders has taught me to be guided by the two main principles—not to make them too light, and not to pare the turf and store it in the borders at the coldest period of the year. If Vine borders must be made in the winter let the soil be stored in summer, storing with it the important element of heat, for to bury cold is indefensible. —A NORTHERN GARDENER.

STELLARIA GRAMINEA AUREA, OR GOLDEN CHICKWEED.

SOME time ago a correspondent inquired about the qualities of this fresh candidate for honours among bedding plants, and I believe he and some others inquired if it is perfectly hardy.

Having had some experience of it I will state that it is a very good dwarf-growing plant for bedding, of not more than 2 inches in height, and early in the bedding season it assumes a bright yellow colour, and is very effective as an edging or for carpet bedding among the dwarf-growing *Alternantheras* and plants of similar growth. But it does not maintain that brightness so necessary for any plant to do when all plants should be in the height of beauty; for towards the latter part of the summer it becomes a sickly green, or I ought to say a greenish yellow, losing its effect considerably—that is, when grown in the ordinary soil of the garden.

It is a plant which will not thrive without plenty of water on the surface, as its roots are there; and as its shoots creep along the ground and root at every joint it must have water frequently. The plant will bear clipping to a confined space: in that case it throws up numerous small shoots till it becomes like a carpet, and if it would maintain its bright colour it would be one of the best plants for use in the present system of bedding. As it is, I am of opinion that it ought to be further tried, and if found no worse it ought to be retained on the list of bedding plants. It is easily propagated both by cuttings and by division of the roots.

With regard to its hardiness, there can be no question about that, for I have left plants of it out in the beds through this late severe winter and they have received no harm whatever. In fact the plants have grown considerably, and for the past six weeks they have been gradually approaching their best colour. I intend to take them up and divide them, as they are now like a mat, and I shall have all I require without any further propagation.

I remember when the plant was first used as a bedder it was reported to supersede the Golden Pyrethrum both as a summer and winter decorative plant; but in my opinion, though a good plant, it has done neither, and most certainly it is not so good as that plant in winter.—THOMAS RECORD.

THE ARRANGEMENTS OF COLOURS

IN THE BEDS OF THE LONDON PARKS AND GARDENS.—No. 13.

THE plans now figured are, like those submitted last week, suitable for the corners of lawns, the angles of walks or recesses in shrubberies. The plants with which they may be planted effectively are of easy increase, preservation, and culture. The following modes of planting beds of these designs have been admired.

BED W.

1. *Agatheae coelestis*.—This is a very pleasing little dwarf plant. The small green and white leaves form a close carpet, and it is spangled all over with sky-blue flowers, which give to the whole an elegant effect. The plant is preserved in a cold frame during the winter. It is easily propagated from cuttings with or without heat.

2. *Alternanthera magnifica*.

3. *Gnaphalium tomentosum*.—A silvery-foliage plant of a dwarf bushy habit. Its long narrow leaves are erect, and the plant can be trained to any desired shape, which makes it so useful for divisions and for edging of beds. It is very effective if planted in juxtaposition to bright colours. It can be

wintered in a cold frame. It roots freely from cuttings in spring with a little warmth, and in the autumn without heat.

4. *Lobelia Omen*.

5. *Teucrium Polium*.—A dwarf spreading plant of a bluish

grey colour. It may be trained to any shape. It is very useful and effective for edging or as a carpet for taller plants. It will winter in safety in a cold frame, and strikes freely from cuttings with or without heat.

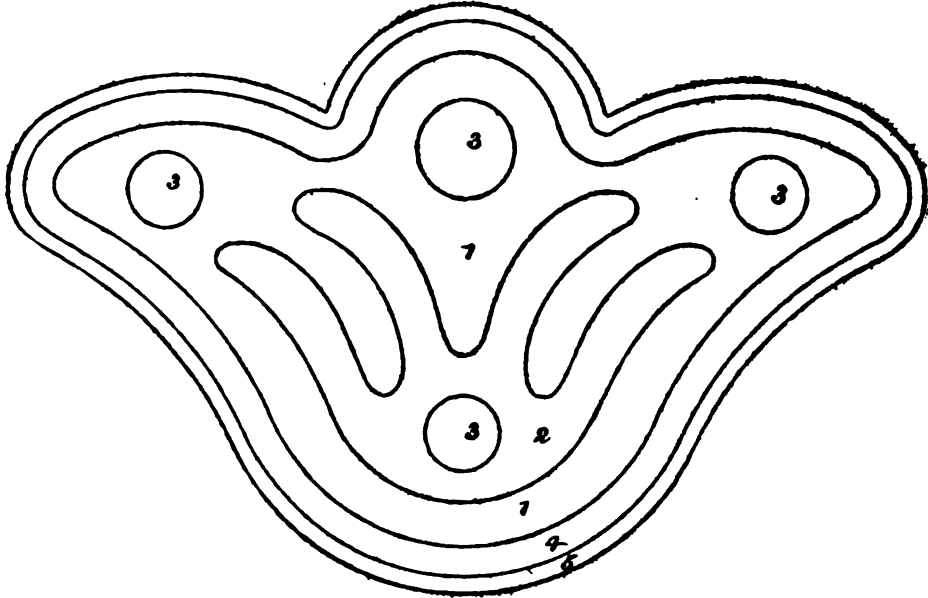


Fig. 86.—BED W.

BED X.

1. *Geranium Golden Tricolor*, *Viola Purple Queen* being intermixed with the *Geranium*.—This is a dwarf compact-growing *Viola*, distinct from *V. cornuta*. Flowers of a pale

violet, borne in great profusion from March to October. A valuable addition to summer bedding plants. Perfectly hardy. It is propagated by seed in the spring.

2. *Coleus Verschaffeltii splendens*.

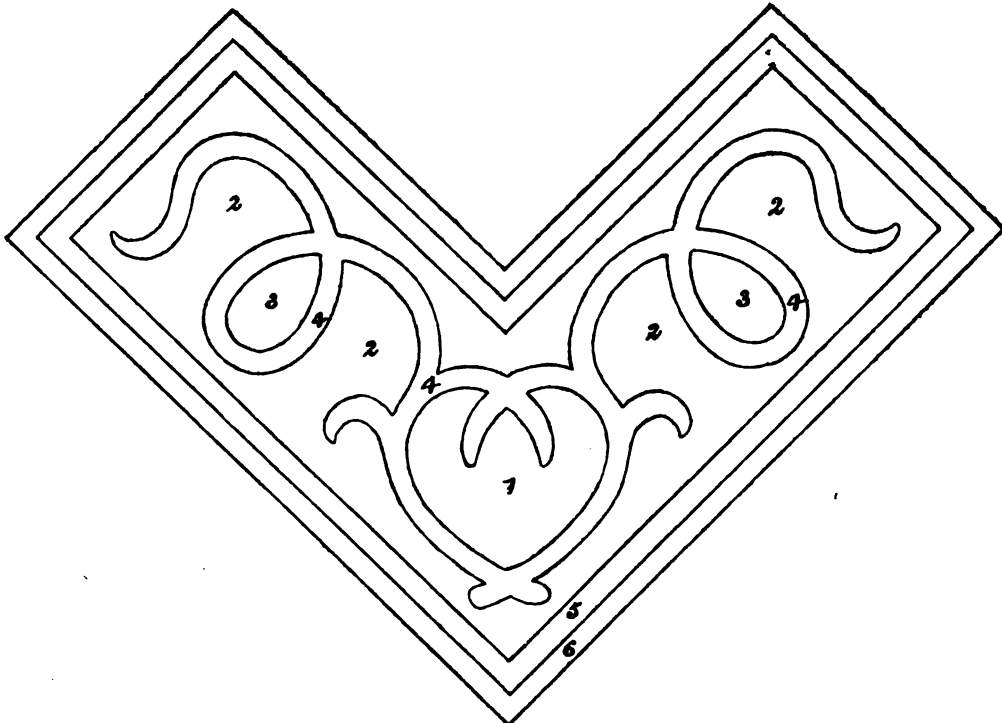


Fig. 87.—BED X.

3. *Geranium Silver Tricolor* and *Campanula turbinata* hybrida.—As a dwarf *Campanula* this is one of the best of its

class, forming a compact, hardy, perennial, herbaceous plant from 9 to 12 inches in height, with a neat close leaf-growth,

yielding a mass of rich purplish blue, white, and porcelain-white flowers during the summer months. It is propagated by seed and divisions.

4. *Golden Pyrethrum*.

5. *Funkia undulata*.—This is a beautiful dwarf plant. The variegation is of a pearly white, and all through the spring and summer it is exceedingly attractive. It is hardy, and is propagated by divisions.

6. *Oxalis corniculata rubra*.—This is a very dwarf and effective plant for covering the ground as a carpet. The colour of the leaves is a rich velvety dark brown colour. It is hardy, and increased by runners.—N. COLE.

NOVELTIES IN THE ROYAL GARDENS, KEW.

RUDGIA MACROPHYLLA, producing a large head of pure white flowers, is blooming in the stove. The leaves are of large size and have been compared to *Medinilla*, with which in habit the plant has some similarity, though from so small a plant much cannot be said. It is about a foot high, and the inflorescence in size is quite out of proportion. The flowers are very beautiful, and have been used in the bridal bouquet of a Royal marriage. Individually they last only a short time, but a large number of buds open in succession, and these alone are of great beauty. The corolla is funnel-shaped and about an inch in diameter. It was figured in the "Botanical Magazine" of 1867, where it is described as "a magnificent plant, and belonging to a genus which, though containing many species, had never previously, so far as I am aware, been introduced into European gardens." It is yet quite rare. The specimen from which the portrait was drawn was sent by Mr. Henderson of Pine Apple Place. It is a native of Rio Janeiro, and is described as attaining a height of 6 feet. Hitherto it has not been tried with different soils or temperatures, but has succeeded in the stove, using a soil of peat and loam as for the generality of stove plants.

Passing through the Orchid house we observe a few species in particular. *Aërides japonicum* is very pretty and sweetly scented. It would, perhaps, do with greenhouse temperature, but is here flourishing in the warm division. It was first introduced by M. Linden, and since by Messrs. Veitch, though up to recent importations it was rather rare. The raceme is pendant and many-flowered. The flowers are white, or nearly so, with the lateral sepals brown-barred near the base, and the spoon-shaped lip is edged with purple, the ridge being marked with spots. It was figured in the "Botanical Magazine" of 1869. *Dendrobium Bullerianum*, or, as it is more often called, *D. gratiolissimum*, is very attractive. *D. Pierardi* still continues in beauty. Several pots of *Cypripedium* spectabile are novel as well as handsome. The forcing of hardy *Cypripediums* is likely to continue in future years. These have submitted well to the treatment, but the flowers are much paler in the coloured part, which is scarcely a deterioration. *C. niveum* is another chaste species now in flower. Some cultivators have found it grow well in loam. Many Orchids usually grown in peat and sphagnum would, perhaps, like to find loam within reach, though to pot them wholly in that material would not be the same to them as their laying hold of it in a wild state. It is interesting to observe that a clever cultivator considers it beneficial, after dipping his block plants, to dust over the roots some dry peat, so that they may obtain nutriment from the adhering particles. Of the true *Onocidium sarcoodes* there is a very fine spike. *Odontoglossum nebulosum* is represented by the best variety. Among other Orchids are *Eulophia streptopetala*, *Chysis aurea* var. *Lemmingii*, and *Leptotes bicolor*. At the cool end several *Sarracenia*s are in flower. These are *S. flava*, *S. Drummondii*, *S. purpurea*, and *S. Moorei*.

In the Orchid house porch are many plants of beauty and interest. *Ficus radicans* has been recently introduced, and is suitable for covering walls and for baskets. It has a similar habit to *F. stipulata*, but the leaves are much larger and of different form. They are ovate or ovate-lanceolate, acuminate, and cordate at the base, with a length of 3 or 4 inches, and of a bright shade of green. It will be news to many that *F. stipulata* is but a young and sterile growth of *F. pumila*, and that in one or two cases when allowed free development it has grown into the aspect and character of the mature form. So different are the two growths that without knowing they came from the same stem it would be difficult to believe in their being one plant. We saw an instance of this about three years ago in the collection of W. W. Saunders, Esq., at

Beigate, and have just heard of what is perhaps another. It is of great interest to know that different parts of what could easily have been the same plant were described as distinct species; but this is not a solitary case. It is better known that *Marogravia umbellata* grows in two forms—the one creeping by means of curious rootlets under the shortly petioled leaves, which are small and closely adpressed to the surface for support; the other a growth of spreading branches, bearing leaves of large size and distinct form. These, we believe it correct to say, when rooted separately have been offered as distinct. *Ficus radicans* strikes with the greatest ease, and the above-mentioned plant clings to the stem of a Tree Fern. *Alborea juncifolia* is quite new, but is only of interest to those who take a special interest in bulbs. It has pendant yellow flowers, with leaves well described by the specific title. *Amphicoelone Emodi* is an extremely rare but old and beautiful plant. It produces a dwarf and compact tuft of pinnate leaves, with flowers shaped like *Bignonia*s; the throat pale yellow, but otherwise pink, and only sufficiently raised above the foliage to be well seen. *Orychophragmus sonchifolius* is a promising and perhaps hardy annual from North China. The leaves are pale green with cruciferous flowers of violet colour in various shades, and in addition to their beauty are sweetly scented. It grows from 6 to perhaps 18 inches high. Among several other bulbs, including several *Iridæ*, *Cycelothra cœrulea* and *Stenomesson suspensum* may be mentioned as the rarest.

The Rockwork is now commencing to be attractive, and several others besides those we shall mention as novelties are beautifully in flower. Parenthetically we may mention *Primula nivea*, *Cardamine trifolia*, *Androsace Lageri*, and *Myosotis dissitiflora*. *Iris caucasicus* is rare, as well as distinct and curious. The leaves are different from all others, being sickle-shaped with long points, and of a bluish green colour. The flowers are yellow, on stalks about 4 inches long. The sepals spread upwards, though corresponding in position with the "falls" of the German *Iris*, and form the conspicuous part of the flower, while the petals are very narrow and descending. *Romanzoffia sitchensis* we have before referred to, and need only again mention it as being a pretty white-flowered *Saxifraga*-like plant, and very suitable for the choicest rockwork. *Saxifraga aretioides* var. *primulina* is a very fine form of the species. It has large yellow *Primula*-like flowers, and the very appropriate name was given by Mr. Niven some short time ago. We believe the plant was brought to notice by Mr. Atkins.

CONOCLINIUM IANTHINUM.

THIS Mexican shrub, introduced in 1849, is the same as *Hebeclinium* and *Rupatorium ianthinum*. It is of stiff, erect, or slightly branched habit, with broad, oblong, lanceolate leaves, and a paniculate inflorescence of terminal and axillary corymbs of flower heads, composed of numerous lavender and violet-coloured florets. The corymbs being large and rather loose have a fine effect at midwinter, at which time the plants usually flower, but I have had them flowering in December and up to February.

Its culture is of the easiest among stove plants, doing exceedingly well in a cool stove or a warm greenhouse, an intermediate house suiting it. In choice of soil it is not very fastidious, doing well in a compost of three parts light fibrous loam, with a part leaf soil and a free admixture of sand. Cuttings inserted now strike freely in gentle heat. I select cuttings of the ripe shoots—i.e., those that have flowered; these are made with two joints, removing the leaves from the lowest joint, cutting transversely below it, and are inserted in sandy soil around the sides of a 4-inch pot, and plunged in a hotbed and shaded from bright sun, keeping moist. Cuttings of the young shoots also strike freely, having two joints and the growing point, and such inserted in June, potted singly when rooted, and shifted into 6-inch pots will flower well in winter, having a large terminal head of bloom. The cuttings put in earlier will by potting-off when well rooted and growing-on, shifting from 4 to 6-inch pots, and from 6 to 8-inch, make fine plants by autumn, fine in foliage and sturdy in growth if kept near the glass, producing in due course large heads of bloom.

The old plants are cut-in after flowering, each shoot being cut to two joints of the old wood, or to one joint if the shoots are weak, the plants being kept rather dry for a few days previously, and carefully watered afterwards until the plants break; and when the shoots are an inch long turning the plants out of the pots, removing most of the old soil and returning to the same size of pot, sprinkling overhead twice

daily, keeping moist, and increasing the supply of water as the roots possess the fresh soil. Free watering is necessary, giving weak liquid twice a week after the pots fill with roots, also a light and airy position. Shift into the blooming pots by July, giving a moderate shift, and attend to tying-out the shoots so as to form a neat compact plant.—G. A.

ROYAL HORTICULTURAL SOCIETY.

APRIL 19TH.

FRUIT COMMITTEE.—Henry Webb, Esq., in the chair. Very few subjects were submitted to the notice of the Committee on this occasion. Six heads of a Cabbage Broccoli were sent by Mr. John Pottle, Sudborne Hall Gardens, Wickham Market. In its early stages it is cut and used as a Cabbage, and at the present time as a late Broccoli. It is said to be excellent for culinary purposes, but was not thought worthy of a first-class certificate. Mr. Sydney Ford, Leonardale, Horsham, sent two brace of Cucumbers Masters' Prolific. They were very good examples of that useful winter sort. He also sent seven varieties of exceedingly well-kept Apples, comprising Pine Apple Pippin, Petworth Nonpareil, and an excellent dish of Wellington.

FLORAL COMMITTEE.—R. B. Postans, Esq., in the chair. The Council-room was tolerably gay at this meeting, principally by a collection of Roses in pots from Messrs. W. Paul & Son, Waltham Cross, and an attractive group of ornamental plants from Mr. B. S. Williams, Holloway. Votes of thanks were awarded to both of these collections. Mr. Williams's plants consisted of Palms, Ferns, and flowering plants, and the singular Aroid *Amorphophallus nivosus*. Amongst the Roses Star of Waltham was exceedingly fine, and the new Tea Rose William Caldwell, which is similar to Rubens, is a promising variety.

Messrs. James Veitch & Sons exhibited some fine Crotons. *C. Mooreanus* has leaves 15 inches in length by an inch in width, with bright yellow midribs, the yellow also breaking transversely through the body green of the foliage. *C. Macraeanus* is a Magnolia-like plant, the leaves being a foot in length by 4 inches in width, each being boldly blotched with bright yellow. The plant is very massive and striking. A first-class certificate was awarded. *C. appendiculatum* is a green-foliaged kind, which has been previously noticed. *C. Diameli*, from the South Sea Islands, is the finest of the trilobed section. It has been previously certificated. Messrs. Veitch also exhibited *Phyllanthus rosemum pictum*, a distinct plant with dark stems and foliage, the leaves being irregularly blotched with rose and white. A first-class certificate was awarded. They also had a vote of thanks for *Dendrobium densiflorum superbum*, which had a splendid raceme of bright yellow flowers. It is one of the finest of Dendrobies.

New Auriculas were exhibited by Mr. Chas. Turner of Slough, and first-class certificates were awarded to Slough Rival, dark velvety purple shaded puce, with a very good pale yellow centre; and Bessie Ray, a neat flower, bright gold centre edged with reddish crimson. Dear Hart is also a showy flower, with some roughness in outline; it is, however, very effective. The above are Alpines. Mr. Turner also exhibited a very good grey-edged flower, Mrs. Purvis; it has a neat habit and good truss. Mr. J. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, received a first-class certificate for a very fine grey-edged flower named Alex. Meiklejohn. It was raised by the late Mr. Kay, the raiser of Topsy. It is a very refined flower, black body colour, dense white paste, and may be regarded as one of the first varieties of its class. Rev. H. H. Dombrain exhibited a very good green-edged flower, Queen of Queens. It has a dense white paste, clear gold tube, and distinct green edge.

Zonal Geranium Vanessa was exhibited by Messrs. W. Paul and Son, Waltham Cross, and had a first-class certificate. The plant is dwarf yet vigorous; the foliage is distinctly zoned; the flower trusses large and pips of great substance, the colour being warm cerise flushed with lilac. It will make a useful plant for pot culture.

Mr. Croucher, gardener to J. T. Peacock, Esq., Hammer-smith, exhibited a plant of *Xylophylla falcata*—a remarkable plant in exceedingly good condition, and which worthily had a cultural commendation attached. A similar honour was awarded for a plant of *Calanthe vestita* var. *ignea oculata* exhibited by Sir T. Lawrence, Bart., Burford Park, Dorking, the plant having a spike containing twenty fine flowers.

Mr. Ollerhead, gardener to Sir H. Peek, Bart., Wimbledon House, sent good examples of *Cypripedium candatum*, *Dendrobium liliiflorum* and *densiflorum*, and *Masdevallia Veitchii*, and a vote of thanks was awarded; a similar award being accorded to Mr. Roberts, gardener to W. Terry, Esq., who exhibited two good plants of *Dendrobium chrysotoxum*. One of the plants had twelve trusses of fine flowers.

A semi-double yellow Auricula was exhibited by Mr. Dean, Ealing, the colour being very bright, with a white eye. The plant is of free-growing habit, and the flowers are very sweet-scented. Mr. Dean also exhibited a collection of *Primula cortusoides*

and *Primula alicina*, and received a vote of thanks. For a small group of terrestrial Orchids Sir G. Macleay, Pendell Court, received a similar mark of recognition.

The Hon. and Rev. J. T. Boscawen exhibited some fine trusses of Rhododendrons which had been grown in Cornwall, and had endured 4° of frost. Mr. Allen, gardener to Viscount Falmouth, Tregothnan, exhibited out blooms of Camellias, also, we presume, from the open air; and Mr. Parker, Tooting, exhibited *Primula acutis umbellifera plena* and Rhododendron magnificum, and the thanks of the Committee were awarded for the *Primula*. Mr. Allen, gardener to Sir R. Sheffield, Normanby Park, Brigg, exhibited *Iresine Alleni*, which is similar to *I. acuminata*. Rose Cleopatra was exhibited by Mr. Bennett, Stapleford. It has good foliage and large blooms. The petals are smooth and gently recurved, the colour being somewhat similar to John Hopper. Cleopatra is not only a good, but also a sweet Rose.

PRIMROSE LADY ADELAIDE TAYLOUR.

THE Primrose "Lady Adelaide Taylour," not Lady Adeline, sent out by Messrs. Carter, is a seedling, and therefore can scarcely be the same as *Primula altaica*. It blooms much earlier than that species, and I consider its chief value is as a flower for winter dinner decoration. It lights up unusually well, and is most effective for the purpose. I agree with Mr. Dean in thinking that the colours of Primroses are not seen to fair advantage in a dark hall or tent; moreover, like many Roses, their colours fade very quickly, and become shabby when the blossoms have been more than a day gathered, or when plants are potted for exhibition. Lady Adelaide Taylour was in bloom with me the first week in January and is still in fair blow.—THE RAISER.

NOTES AND GLEANINGS.

THE change from foul weather to fair at the early part of the month was not more sudden than the recurrence of winter after several sunny days of spring. The bright sunshine and genial temperature raised the hopes of cultivators, and every post brought us hopeful tidings as to the prospective plenty of the fruit crops; but on the eve of our going to press last week we had the unusual combination of thunder and snow in London, and the weather on Thursday night and Friday morning was the most inclement of the entire winter. On Friday snow was 6 inches in thickness in the neighbourhood of Sydenham; and our country correspondents, especially in the north, have told us of the breaking of the branches of their fruit trees by the weight of snow, and the great injury that has been done to the blossom by the violent and intensely cold gale. This applies more particularly to Pear and Plum trees, the Apple blossom not being fully expanded; and the trees on south walls have generally been sufficiently sheltered to prevent them receiving material injury. The temperature is again rising, and notwithstanding the severe ordeal which vegetation has experienced, we have still hopes of a "good fruit year." In the market gardens near London we are informed that great injury has been done to the early Cauli-flowers, many plants having been cut into shreds by the violent frost-winds.

THE Hyacinths in the beds in HYDE PARK, which each spring are so well grown and so attractive, have this year not been so durable as usual owing to the very severe weather—the high winds, driving snow, and heavy rains of last week. The white varieties have lost their purity and some of the pinks are battered and faded, but the deeper reds are still effective. The light blue spikes are also more severely injured than the dark blues, several beds of the latter colour being still rich and massive. These beds are still worthy of a visit, for if the spikes have lost their brightness the character of the varieties can be seen, and their spring-like perfume can be enjoyed by visitors. The beds are numbered, and many who have inspected them have been consequently disappointed. Unless some good reason can be offered to the contrary flowers in public gardens should as far as practicable be named, for a vast number of visitors attend such gardens, seeking not merely enjoyment but also instruction.

ANY lover of ORCHIDS who would call at Mr. Robert Warner's, Broomfield, near Chelmsford, will find the Vandas in full flower. The gardener will show them. One single stem has five good spikes on it.

How effective are well-grown plants of *PRIMULA CORTUSOIDES* AMCENA for spring decoration was well exemplified by

the collection exhibited by Mr. Douglas at the Westminster Aquarium last week. The collection embraced also the varieties *Lilacina grandiflora* and *Alba*. The plants were about a foot high, the flower stems numerous, and the pips as large as those of ordinary-sized Primroses. The slight protection that these plants require, their easy culture (not occupying valuable space under glass during the summer months), and their charming effect when well grown, should render them indispensable in every greenhouse however small. They should be included amongst the spring-flowering plants of all amateurs and gardeners.

— M. HENZÉ, Inspector General, and member of the Committee of Agriculture, has contributed the following statistics respecting the MARKET GARDENING NEAR PARIS, in a paper read before that Society. At the present time the market gardens in the suburbs of Paris are 1800 in number, covering an area of 1878 hectares (8404 acres). Those within the walls of Paris occupy 750 hectares (1852½ acres). The average size of these gardens is from 60 to 70 acres (1½ acre to 1½ acre). They generally contain a dwelling-house, a well, a stable, and a shed. The land lets at from 1000 to 1200 francs per hectare (£16 8s. 4d. to £19 7s. 6d. per acre), and the house at from 800 francs to 400 francs—£12 to £16. The land is never at rest, and produces from two to three crops yearly. For such a cultivation a great deal of labour is necessary, abundant manure, and frequent watering, and often artificial shelter has to be provided for the crops, so that in these 1800 gardens there are 860,000 forcing frames, and 2,160,000 bell-glasses. The owners rise at two o'clock in the morning in summer, at four o'clock in the winter; the master is always at the head of his men, whilst the wife looks after the women, and it is she alone who attends the market. The population employed in market gardening is about 7500 persons. The value of the stock is estimated at 8,000,000 of francs (£320,000). 1,200,000 francs (£48,000) is spent annually in stable manure, whilst the value of the vegetables sold amounts to 12,000,000 of francs (£480,000), and 800,000 francs (£12,000) is obtained from the sale of exhausted soil.

— We have received the "ANNUAL REPORT OF THE MELBOURNE BOTANIC GARDENS," and in every respect is it creditable to Mr. W. R. Guilfoyle, the Director. We commend the following extract to the attention of flock and herd-masters in torrid latitudes:—"The Doub Grass (*Cynodon dactylon*), often erroneously called "Doob," is a native of Bermuda, and in my opinion ranks next to the Buffalo Grass (*Stenotaphrum glabrum*) as a hardy pasture grass for arid climates, though as a lawn grass it is inferior, presenting in the winter a brown and rusty appearance. I can state from experience, however, in New South Wales and Queensland, that where it has been introduced round a station both horses and cattle, when left to feed as they chose, have collected round it eagerly, refusing the native grasses in luxuriant growth near them so long as a blade of the Doub Grass remained. As to the nutriment contained in these two grasses there can be no doubt, as many squatters across the Murray could testify. Respecting their durability the same may be said, as during seasons of excessive drought, when scarcely a blade of them could be seen, so tenacious of life were they, that when the weather broke they sprang up in rich luxuriance, and when native grasses were totally destroyed by the drought these two species were the only ones that withstood it."

— FRUITS AT THE CENTENNIAL.—The American "Gardener's Monthly" states that a space 525 feet long and 100 feet wide will be devoted to a continuous exhibition of fruit, so that anyone at any time may send anything they have. The opening day will be May the 10th, and it is expected that tropical fruit will then be at once on the tables. Certain periods will be set apart for distinctive exhibitions. July 1st will be devoted to a special display of Southern fruits, and September 11th will be given up to the American Pomological Society. The Bureau of Agriculture has made arrangements for providing 10,000 dishes to exhibitors, should that number be necessary. The Bureau will also furnish table room, all free of charge. Premiums will only be offered by individuals or societies. Of fruits, so far, premiums have only been arranged for Apples, but it is hoped others will come in.

— A VERY useful book for those who desire to understand why the name of a plant was bestowed upon it is Alcock's "BOTANICAL NAMES FOR ENGLISH READERS." It has just been published by Messrs. Reeve & Co. One of the definitions will be an answer to a query from a correspondent. "MURICATA,

from *murex*, a fish armed with sharp prickles; muricate—that is, armed with short points or excrescences."

— THE American "Gardener's Monthly" will be hereafter known as the "Gardener's Monthly and Horticulturist." It will continue under the able editorship of Mr. T. Meehan.

GARDEN VASES.

VASES are generally more used about small than very extensive gardens. In the former there is a tendency to have too many vases, but when judiciously placed they add considerably to the beauty of the flower garden and pleasure grounds of whatever extent. The situations in which vases are generally most becoming are on the stone blocks at the top and bottom of stairs, about balconies, each side of doorways, and dotted here and there amongst flower beds or small shrubberies.

In introducing vases the first thing to be considered is the kind and style of the vase. The forms in which they may be had are numerous, and the materials of which they are made are also varied. Beautiful mouldings are formed of terra cotta. They last a considerable time in good order, but ultimately, and before a great many years are over, they begin to lose their sharp edges, and decay through exposure to frost and wet. This, of course, is very objectionable in cases where they have to remain constantly outside, but where they are wanted in summer only and can be removed under cover throughout the winter, there can be nothing said against them.

There are other kinds of vases more to be recommended. Marble makes a splendid and durable vase, but is very expensive at first. Hard stone is not inadmissible, but it is not free from the faults of the terra cotta. In shifting and planting them there is always a danger of "chipping."

For smart outline, variation in form, and great durability, there is nothing surpasses cast iron. Weather of any kind has no power over iron vases. They are not readily injured, and they will last anyone a lifetime. The accompanying figures represent iron castings. They are not selected for their novel appearance or great beauty and artistic character,

but they are extremely useful both in size and form, and that is of some importance. Fig. 88 looks exceedingly well on a terrace wall, or about a narrow staircase where a broader one would obstruct the way. Fig. 89 is much larger and an excellent form for the centre of a large bed, or as a centre for a number of small flower beds. Raised on a pedestal it has a massive appearance amongst other kinds of sculpture, and it admits of being planted in a design or with a variety of plants. As a real useful vase for general purposes fig. 90 is the best I have seen. It is plain in design, but when planted it looks well. As shown it stands on a pedestal, but it can be lowered to its own bottom in cases of it being set on raised stair blocks or anything of that kind. Generally it is much better when pedestals



Fig. 88.



Fig. 89.



Fig. 90.

can be done without. Of course on low ground the vases have to be raised, but they should never stand so high that the entire surface when planted cannot be seen. Much of the effect is lost when only the stems of the plants are seen from below.

It is not desirable to have the vases in themselves of a highly ornamental description. The ornamentation should be done with the plants and flowers. This should always command more attention from the observer than the design of the vase; and to have the plants in an attractive state throughout the whole year may be accomplished with little trouble.

Like flower pots each vase has a hole in the bottom to let superfluous water escape. To keep this in working order the bottom must be filled with broken crocks, and care must be taken in placing them in to lay a large piece over the hole and fill up afterwards for 2 or 3 inches, according to the size of the vase, with smaller pieces. The drainage must be packed closely together that none of the soil can become mixed up with the lower part of it, or its influence will be entirely lost. When the crocks have been carefully laid in, a fresh turf with the grass side down should be laid over them, and the vase may then be filled with soil suitable to the plants with which it is intended to be filled. For common summer bedding plants a mixture of loam or garden soil and decayed manure is suitable. The bottom part should be firmly rammed, and when the plants are put in the soil should be pressed very firmly about them, otherwise much labour is necessary in watering in dry hot weather.

Now the success of the work in producing attractive vases depends on the manner in which the plants are selected and arranged. Sometimes the vase-filling is considered of secondary importance, and every corner about the place is "bedded" before the odds and ends are collected together to fill the vases. Such examples need not be looked at for imitation, but when the vases are filled with the elect, to which their conspicuous position entitles them, their appearance is very different.

Such vases as fig. 89 may be planted as a flower bed in design—that is, the centre may be a mass of one colour, and the edge of some other kind. One good colour looks better in a small vase than an indefinite mixture. An edging, however, of some drooping plants different to the other plants generally improves the appearance of the whole. Tall, straight-up-looking vases have to be planted with tall plants, and low flat vases must be filled with little dwarf plants to be in character.

Nearly every plant used for flower beds is suitable for vases. Trailing plants should be planted around the edge so as to hang gracefully over. These may consist of Ivy-leaved Geraniums, such as Duke of Edinburgh, the old Mangles' variegata, Treasure, L'Elegante, Lady Edith, Willisi, Willisi rosea, Aurea marginata, and many others of this class; Tropaeolums of the Cooperi and Attraction description; every kind of Ivy, especially the finer variegated sorts, which are beautiful-leaved plants, are well worth cultivating anywhere; Lobelias of the speciosa type mixed with something more trailing. Mesembryanthemum cordifolium variegatum looks well either in foliage or in bloom; and Cerastium tomentosum is an old silver-leaved favourite which in its way has few equals. It has the advantage of being effective in either summer or winter.

Centre plants should be of upright growth, Geraniums and Calceolarias are very suitable. In large vases the centre plant or plants should be slightly elevated above the outer plants. When Geraniums are used old plants saved from last year generally make good centres. There are now so many good Geraniums that it is difficult or unnecessary to name those varieties most suitable. When they have to be seen from a distance the brighter the colours are the better. Yellow Calceolarias are excellent vase plants in summer, they bloom so freely and are so conspicuous amongst other plants or flowers. A sprinkling of Verbena venosa or Purple King Verbena amongst the yellow is very effective. The venosa is the best of the two for this purpose, as the small flower heads mix better amongst the Calceolarias.

In the summer season constant attention must be given to watering. In dry weather the whole soil should be thoroughly moistened every morning. When the weather is very hot at the time of planting it is a good plan to remove the smallest and most portable vases under some tree or into an open shed to be filled, and they should be allowed to remain here for a week or two until the plants take hold of the soil, as they are somewhat liable to suffer at first in exposed situations. In some small vases there is a kind of zinc basin which may be lifted out and in as required. When this is the case the basin may be taken under cover and filled a few weeks before it is safe to risk the plants finally in the open air. Treated in this way the vase is at once effective at bedding-out time; but let the vase be filled when it may or how it may, the plants should always be put in thick enough to form a mass. In such bleak places as on balconies the plants in vases have not a favourable chance to make luxuriant growth; at least, by the time they do so the best of the season is past.

However attractive well-filled vases may be in summer, they

are none the less so throughout the winter, and especially in spring. They cannot be had full of flowers in November and December, but they may be furnished even at that dull time. When they are cleared of their summer occupants in October the soil should be stirred-up, and if much exhausted about the surface it should be removed altogether and replaced with fresh material. For bulbs it must be made moderately rich; in fact, for most plants it should be quite as strong as it was for the Geraniums in summer. The coloured-foliaged plants at this time are not very numerous, being chiefly Daisies, green-leaved and variegated; Wallflowers, Forget-me-nots, Saxifragas, Sedums, Sempervivums, Arabis, Alyssum, &c. Amongst bulbs Hyacinths, Tulips, and Crocuses are the most useful. When the vases have been filled with soil planting may be proceeded with. Plants in leaf may be planted first, and the bulbs can be put in afterwards. With a careful selection of plants and bulbs a succession of flowers may be had in one vase from the end of January to the middle of May. This was secured last spring in several large vases in the following manner:—In October they were planted with Rex Rubrum Tulip, Alyssum saxatile, double-flowering German Wallflowers, and Crocus. Each of these was planted thinly all over the surface. The Crocuses were in bloom by the end of January, and very pretty a small round mass of them looks in a vase. These were followed by the Tulips, having a beautiful undergrowth of bright yellow in the Alyssum, which remained in bloom until May, with the sweetly-scented Wallflower for a companion. A great many different shades of colour may be had in the Tulips. Rex Rubrum is one of the best with its large double blooms. An undergrowth of White Daisies and Blue-fag Tulips, which have a violet shade, are very pretty. Red Daisies and Rose Guisuldine Tulip make a lovely vaseful. The Tulips look rather naked in themselves unless very closely planted, but they are more effective planted thinly and carpeted underneath. For the latter purpose the white early-flowering Arabis alba and the white and blue Myosotis are well adapted.

Small vases may be filled in winter with shrubs. In much-exposed places this is a better plan than using flowering plants; as shrubs, such as the common variegated Aucuba japonica, Chinese Juniper, Cupressus Lawsoniana, Cryptomeria elegans, Retinospora ericoides, and the pretty Fern-like R. filicoides withstand severe weather without injury and are continually effective. In a small, dwarf, compact form the Cedrus Deodara is a most elegant vase plant. Unless in exceptional dry times little or no artificial watering is required throughout the winter. The best way of treating the shrubs is to grow them in pots. Good-sized plants may be had in pots that will fit into a 16-inch or 18-inch vase. When such plants are not employed throughout the summer they may be plunged in ashes in some out-the-way corner, and here they need very little attention in the way of watering until they are again shifted into the vases, where they may be placed at any time without being subjected to the slightest disturbance or check at the root.—J. MUIR.

PANSIES AT THE ROYAL AQUARIUM.

THIS useful old spring flower was not invited for competition. Like the Auricula the Pansy is not so much grown as it deserves, but it has one or two advantages in its favour which the Auricula has not. It is a much hardier plant, and is well adapted for beds or borders. If for exhibition it must be grown in beds where the flowers can be protected from the weather. For ordinary decorative purposes a row of plants may be put out in rich light soil in the front row of an herbaceous border; they flower very freely until the hot weather sets in about the month of June, when the plants, unless supplied freely with manure water, show signs of distress. Mr. Henry Hooper of Bath was the only exhibitor, and in his stand were some very fine flowers; the varieties most worthy of notice and which ought to be in every collection are—

Enterprise, a fancy flower of the largest size, and of good substance. The colour is rich mulberry, with a large purple maroon blotch. A first-class certificate was awarded to it.

Duchess of Edinburgh is the largest Pansy I have ever seen. The flowers are cream, edged with violet, and a large purple blotch in the centre. This will make a fine bed or border flower.

King Coffee has been previously exhibited at the London exhibitions, and has been awarded several first-class certificates. It is, perhaps, the best yellow Pansy; the colour is

deep gold, with rich purple blotch. It was shown in very small pots, and flowering freely.

Miss Kimberly ought also to be noticed as being a very fine white, with distinct blotch.

Mr. Hooper cultivates the Pansy very well, and has been successful in raising a large number of very fine flowers.—J. DOUGLAS.

THE BLACKBERRY.

"First choose thy objects from
thy native soil,
Where, daily seen, they own
thee for their lord,
And, born with thee, shall
greater joy afford."

So wrote the poet, but the gardener has not heeded his advice; the rare and the foreign are most in request, and we once knew a spray of Lily of the Valley rejected because, where the rejector lived, "it is so common."

Among the fruits that we do not "first choose" from our "native soil" is the Blackberry, but our American relatives are wiser. We have on our table Messrs. Ellwanger and Barry's catalogue of the fruits grown in their Mount Hope Nurseries, Rochester, New York, and in the catalogue are enumerated five varieties of the Blackberry:—The Improved High Bush or Dorchester, New Rochelle or Lawton, Newman's Thornless, Wilson's Early, and the Kittatinny. We copy this last-named from the catalogue:—

"THE KITTATINNY.—Very hardy and vigorous, not quite so large as the Lawton, but of better quality, probably the best-flavoured variety in cultivation."

Why do not our fruit-growers try them? But it must not be concluded that these large-fruited kinds are descended from our common Bramble; they are varieties of an American species, *Rubus occidentalis*, popularly called the Western or Virginian Raspberry.

HYDRANGEAS WITH BLUE FLOWERS.

Iron rust is an excellent agent for changing the pink flowers of the Hydrangea to a deep blue. In a valley here there is a vast ochreous deposit arising from the action of the air upon mineral springs. Some thousands of cartloads of the soil through which this water has percolated for a long course of years has been used for fruit stations and flower borders. All the Hydrangeas (about fifty in number) that have been planted in it have grown freely, and are annually laden with a profusion of flowers of a deep rich blue colour. This fact is as important as it is interesting, affording a hint of such value as to place blue-flowered Hydrangeas within the means of everyone.

Here is my explanation. Ochre in its pure state is simply a combination of iron rust and water, technically termed a hydrated peroxide of iron or ferric acid. If, therefore, common ochre be mixed with the soil in which Hydrangeas are planted the flowers will come blue, and the depth of colour will be pretty much in proportion to the quantity of ochre used as well as its condition. It is well to remember this, because the

ochre of commerce is often much adulterated with substances which are only to be detected by a chemical test.

What do the market gardeners say to this? Would not a batch of rich blue-flowered Hydrangeas be regarded as a startling and most welcome novelty among the thousands of pink trusses which are annually sent to Covent Garden? and would not the production of them prove a most profitable investment?—EDWARD LUCKHURST.

In a late number of "our Journal" a desire was expressed

by the Editors for information about the change of colour in Hydrangeas. Knowing that a most successful experiment had been made on a fine plant at Charmouth Court, I wrote to a friend for particulars.

The lady who owns the plant has a chalybeate spring in the neighbourhood, and she tried the experiment of placing a compost of earth taken from under the spring around the plant. But this did not produce the desired effect. After this her man procured a lot of rusty iron nails and put them round the base of the shrub, and the rain, and watering in dry weather, washed the rust into the roots and so turned the flowers blue. This treatment is continued annually. My informant adds, "I have seen it in magnificent flower, quite a bright blue all over."—JOHN B. M. CAMM, *Monkton Wyld*.

THE WEATHER.

We registered 0.87 of rain on the morning of the 13th, and this was followed by the thermometer falling to 21°, or 11° of frost. Snow fell for twelve hours on the 13th to a depth of from 14 to 16 inches, and heavy falls recommenced early on the 14th, making an additional fall of 8 inches. The gardens and the whole country presented one face of deep snow. The drifts were 3 feet on the roads. In all my experience I never

saw such weather in the month of April. At the moment I write rain has succeeded snow.—W. INGRAM, *Belvoir Castle, Grantham*.

I THINK the gardeners in the north need not envy their brothers in the south and western districts at this most unfavourable season of the year, as we are having severe frosts for the month of April. On the morning of the 12th the ground here (Dorchester) was a sheet of snow from 3 to 4 inches thick, with a very cold wind blowing from the north-west, with heavy snowstorms at intervals throughout the day, followed with snowstorms on the 13th. The snow is still to be seen on the sides of the hills now, the 14th. There is no doubt but some of the wall fruit will suffer to some extent, but I am very pleased to see some of the Peaches are set.—W. G.

EARLY WRITERS ON ENGLISH GARDENING.

No. 12.

REV. WILLIAM HANBURY.

We have known many and have read of more enthusiasts, but never of one more persistent than the clergyman to a



Fig. 91.—THE KITTATINNY.

notice of whose efforts we are now about to devote a portion of our columns. He has told his motive and his course of proceeding in the two following sentences:—"As the amusement of gardening is innocent, and the profits arising from it are intended for the glory of God and the good of mankind, I think I cannot be censured for pursuing this bent."

"When a boy I was continually studying the culture of things, but the true sweets I never tasted till I entered the University."

He then became more fully convinced that gardeners know nothing of theory, and some gentlemen know theory but are not practical. To instruct them in that which they lacked

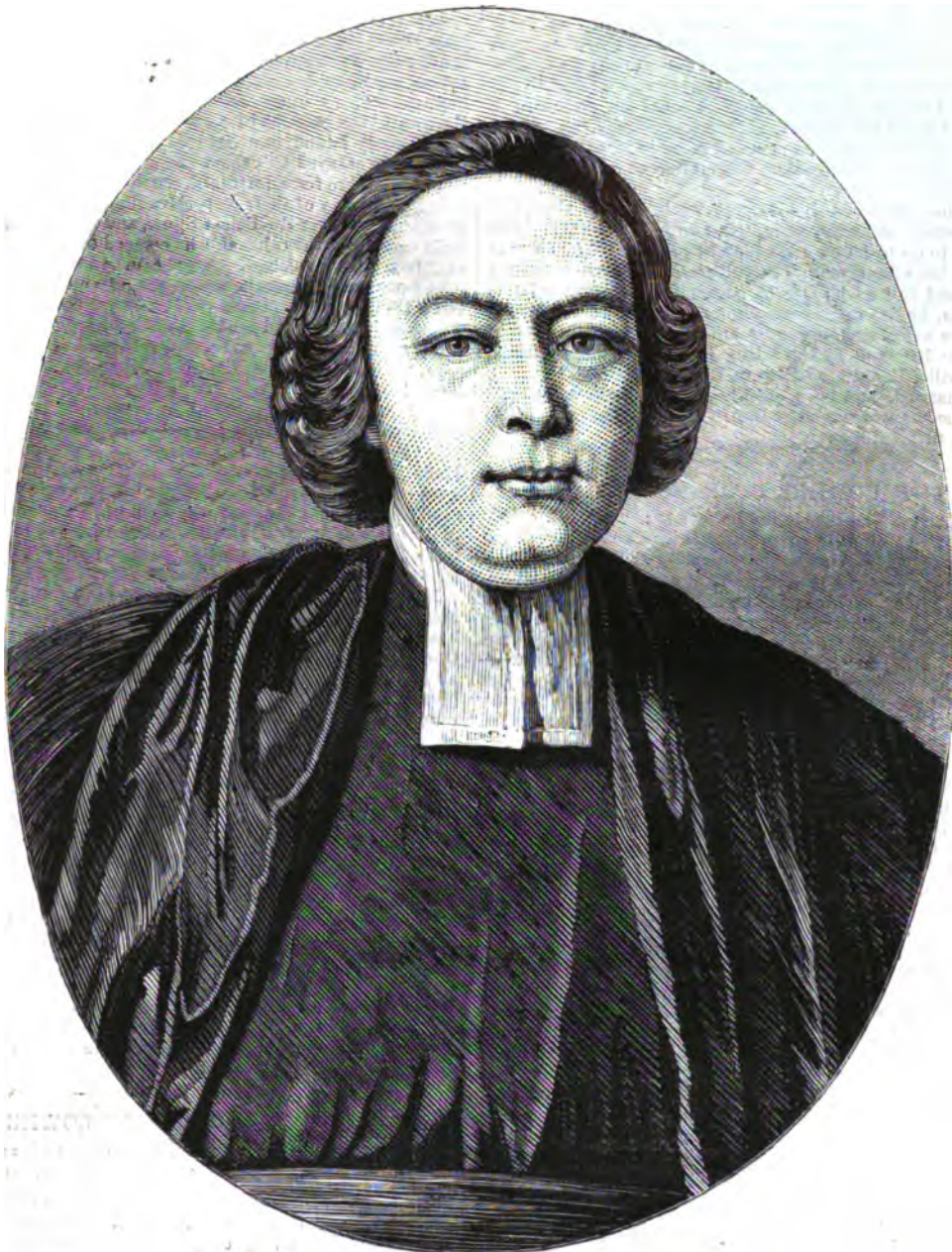


Fig. 92.—REV. WILLIAM HAMBURY.

he determined to make an effort. We will trace his biography as well as we are able.

He was born in 1724, and his father was probably the rector of Church Langton, for the living has been in the possession of the family for centuries. Of his youth we have no memorials, but we have the record that in 1751 he began cultivating the acquaintance of the most noted seedsmen, nurserymen, and gardeners; found their plants, trees, &c., too few, consequently opened a foreign correspondence. Meanwhile, whilst thus collecting specimens, he commenced preparing a seminary and nursery, and completed this by the spring of 1753. He then

obtained more land and planted 20,000 young trees. He was too hasty, and the ladies who let him have the land destroyed the trees. He procured other land, and in a year or two his nursery at Tur Langton was established, and by 1757 his large plantations at Gumley. So energetic had he been that his plantations and nurseries in 1758 were valued at £10,000. He then had nearly 50 varieties of Peaches; Nectarines, 20; Apricots, 12; Cherries, 30; Pears, 60; Apples, 60; Plums, 60; Vines, 40; Figs, 10; Gooseberries, 30; besides Currants, Quinces, Medlars, Walnuts, Nuts, &c.

That year at Oxford he published his first work on the

subject, entitled "An Essay on Planting, and a Scheme for making it Conducive to the Glory of God and the Advantage of Society."

In 1759 and two succeeding years oratorios and other musical meetings were held at Church Langton to increase the funds.

In 1760 he published "A Plan for a Public Library at Church Langton," the profits also to be devoted to furthering his plans. In 1761 his winter's sale of trees amounted to more than £1000. In 1763 the portrait was painted which we have partly copied. In 1765 he had made so much profit that, after building an organ and adding bells to the church, he had £1500 surplus. In 1767 he executed deeds of trust for endowing a school, beautifying the church, aiding the library, an annual beef feast, a picture gallery, a printing office to print devotional tracts for gratuitous distribution, foundation of a hospital, and professorships of science.

In 1773 he published his largest work, "The Complete Body of Planting and Gardening," in two folio volumes. The profits were to go to forward his plan of raising £10,000 a-year to carry out his intentions. The cultural details are generally excellent; and full as he was of general information relative to the plants, he has interspersed much of historical interest. One sentence as an example must suffice—"Broccoli was first brought into England by the father of my late worthy friend Cosmas Neville, Esquire, of Holt in Leicestershire."

He was married, and his second son and only daughter are buried in the mausoleum with him. He died February 28th, 1778, in his fifty-third year.

THE COMING ROSE SHOWS.

A LATE Easter, nothing could be better; but what a late spring it is also! I do not remember things so backward for years past, but yet there seems good promise. Certainly round here the blossom on the fruit trees is most abundant, particularly on the Plums. The last two nights, however, have been unusually cold for the time of year; we had here, within three miles of the sea, ice half an inch thick the night before last (April 10th), and last night a heavy fall of snow. My Roses—the Roses that I congratulated myself would be in bloom just in time for the Crystal Palace Show—have been so pinched by the frost that I doubt whether the trees that have been planted last of all will not be before them.

I find it an excellent plan to plant my Roses at certain intervals from the beginning of November to nearly the end of March. I know that it is a little hazardous to buy plants so late as the last week in the month; but, as a rule, if they are not long on the road, very few if any die, and the plants give you blooms just at the time when the Hereford giant's and northern swell's are in full bloom. The Crystal Palace fixture this year is unusually early, even for the Sydenham people—June 16th and 17th; a very good fixture for outbacks, but how about the maiden blooms? I feel confident that, unless we have most genial weather in May, Mr. Cranston, for one, will not put in an appearance at Sydenham.

The Birmingham and Nottingham fixtures are not yet out; but supposing they are the week after the Alexandra and Aquarium—and I do not see how they can be before—the Rose show season will be spread over a month. It will be hard work even for "Hercules" to keep up the steam for that time, but I shall be much surprised if he does not do so.

The Crystal Palace schedule is different in several particulars from any former one. First there is a class (for nurserymen) for twelve Tea-scented and Noisette Roses, distinct. Hurrah! I always felt it was such a shame that the Palace people never gave a class for Teas. Now, the early fixture will just do for these, the aristocracy of Roses, and we shall see Mr. Cant in fine form.

Next there is a most important alteration in the amateur classes. Instead of twenty-four single trusses in class 8, twenty-four trebles have to be shown, and instead of twelve singles twelve trebles, and also there is no restriction as to showing in this last class. In days of old the all-conquering "Hercules" was debarred from picking this little plum from the Rose pie, which was prepared for infants like myself, so that we too might have a chance. Now, "Hercules" can eat up the whole pie and leave not even a crumb for us poor little fellows, and he will do it too, see if he does not. I cannot help thinking, however, that twelve trebles is too large a number for the lowest class in any schedule. Small growers will have difficulty in bringing those perfect blooms together

with spare flowers of twelve leading sorts, while it will be a joke to "Hercules."

While speaking of this Show I wish something might be done to clear the ground, after the time of closing arrives, of all people except exhibitors, and these should retire for a short time that there may be no mistake. This is done at Hereford, where the arrangements are capital, and no difficulty is experienced by any exhibitor in removing his boxes. Not so, however, at the Palace, as my experience will show. The Rose Show being hitherto on a Saturday, and the last train on the South-Western leaving at 4 p.m., I am obliged to leave before the Show is over, or else the same catastrophe (?) would happen here as once did in certain parishes in Devon and Cornwall, the parsons of which, taking it into their heads to visit Lundy Island one Saturday, arrived there all right, but when they essayed to depart the wind had changed, and they were kept there for a fortnight, much to the (may I say, Messrs. Editors) dismay of their respective flocks. My man had to see after boxes all over the Palace Show, and wanting a bloom or two from one box at the other side he crossed over and found blooms and box alike vanished. A policeman standing by told him that two men had calmly put on the lid and walked off with it; but "there they are," and just in time the box was recovered. Another fellow played me an equally sharp trick. "A gentleman, sir, at least he was dressed like von, cum up to I and says, 'Where be Meester Camm?' 'Gone home,' I says. 'Gone home! impossible!' says he. 'Yes, he be; he's gone home.' 'But,' said he, 'he promised to dine with me to-night, and said I was to have all his Roses.' 'He said nought of that to I.' 'But he did to me. Come, bring them out. Is that all? Have you no more over the way?' And the end of it all were that he walked off with them all, but here's his card." I need not say that the card was as new to me as the invitation to dinner was news. It is, however, no joke to lose Rose boxes full of tubes, and I hope the Palace people will protect exhibitors from thieves for the future.

My letter to you upon the subject of the superiority of the Manetti as a Rose stock over the Briar and all other stocks has elicited several letters, all more or less flattering to myself. One large nurseryman regrets that I should have formed such a bad opinion of the Briar as a stock, and in order that I may give it another trial most kindly offers to present me with a number of his best standards next autumn; and Mr. Cranston of King's Acre, Hereford, the largest cultivator of the Manetti, and the most successful exhibitor from that incomparable stock, writes, "I am delighted with your article, 'Manetti versus Briar.' There is no doubt at all of its (the Manetti) superiority, and for one thousand grown on Briar or own roots we see a hundred thousand grown on Manettis. What more proof need we than this?" I was so delighted when I received this letter that I did not, as Mr. Reynolds Hole says he did when he felt that all his difficulties about instituting the first National Rose Show were over, "whistled whilst in the act of shaving," but I heaped a lot of old Rose stakes which had come from Starveacre, the scene of my inglorious failure and ignominy last year, on my fire; and do you know that my bad luck followed me even to the very end, for these stakes immediately set my chimney on fire, and I had to sit up till 4 a.m. holding wet sponges against the wall of my bedroom.—JOHN B. M. CAMM.

THE ROYAL AQUARIUM FLOWER SHOW.

AMIDST a storm of thunder, lightning, and snow this new candidate for the favour of the public and the sympathy and support of horticulturists opened its first Exhibition; and taking into account the early date at which it was held and the extreme severity of the season, the Directors and their able Superintendent Mr. Wills may congratulate themselves on a decided success.

It was not to be expected that Mr. Wills, who has gained so wide a reputation for skill as a decorator, would be contented with running in the ordinary groove nor be satisfied with the straight formal lines which generally mark our flower shows; and I was therefore not surprised to find that the Exhibition was arranged in a different manner, the plants being placed in semicircular groups of two, three, or more, trees and foliage plants being introduced amongst them. The effect was in pleasing contrast to those melancholy arcades at South Kensington. The most pleasing group was one which was specially arranged according to Mr. Wills's ideas. It consisted of some Roses in pots from Messrs. Paul & Son of Cheshunt, with Palms at the back; some round baskets of glorious blooms of *Maréchal Niel* from the same firm, splendid in size and colour; two also from Mr.

Walker of Thame, the spaces filled-in with *Isolepis gracilis*, taking away from the formality; and the front row filled-in with plants of *Cyclamens*, of which there was a magnificent display; while on the opposite side, immediately under the orchestra, was a fine bank of *Roses* in pots from Mr. Wm. Paul.

Owing to the fact that the Exhibition did not open until two o'clock ample time was given for making arrangements, and had the Judges' work been much more arduous than it was all could have been comfortably done. Mr. R. Dean brought his energy and experience to bear in carrying out Mr. Wills's plans, so that all went without a hitch. Nothing can possibly be more convenient for an exhibition than the position of the Aquarium; and although the building lacks the size and grandeur of the northern and southern palaces, yet the plants looked well, and the courtesy of the Superintendent gave full expression to the liberality of the Directors.

The report in last week's Journal was so complete that it leaves little for me to say: however, there are a few things about which I may, as in my own peculiar province, say a word. *Auriculas* were fairly well represented, Mr. Douglas showing a large number and eliciting some surprise at the forwardness of his bloom. Mr. Turner, Mr. James, and myself were all late; and what still more struck us was that kinds which with all of us are amongst the latest bloomers, such as *Lancashire Hero*, were staged by him, while with myself there is not a pip of it opened. Where shows are held early it is of course a great advantage to be able to manage this, nor do I know to what it is to be attributed, as Loxford Hall is not a warm place. My own collection will be fairly in bloom about what we used to consider the orthodox time—the 25th, although we are, I am sure, late in this neighbourhood, for I notice every year that the fruit trees and vegetation generally are much more forward nearer the metropolis. Amongst the sorts which were represented were Col. Taylor; Col. Champneys; Headly's Alderman Wisbey, a fine green edge, but somewhat inclined to coarseness; Kay's Topsy, a pretty self; Dickson's Apollo, a good purple self; Traill's General Neill, green edge; Dickson's Matilda; Campbell's Pizarro, fine self; Cheetham's Lancashire Hero, good grey; and Headly's George Lightbody, not in very good condition. There were also some fine Alpines.

Amongst seedlings exhibited and certificated was a fine new Rose from the Chesham firm, Duke of Connaught, a very fine bright crimson flower of good substance and of brilliant colour. Mr. Wm. Paul exhibited a seedling Tea unnamed, but which promised well. These both received first-class certificates, as did also a very fine deep claret fancy Pansy, exhibited by Mr. H. Hooper of Bath, called Enterprise.

Altogether I think that the Directors of the Royal Aquarium may be congratulated on the success in a horticultural point of view of their first Show.—D., *Deal*.

OUR BORDER FLOWERS—GAGEAS.

A RACE of dwarf spring and early summer-flowering bulbous-rooted plants, well adapted for front rows in herbaceous borders. These plants do not require any particular treatment, but prosper alike in sunshine and in shade. I have seen them do well in loam on a gravelly subsoil. When well established they should not often be disturbed. They succeed in open spaces in the shade of trees if not too much shaded. They may be increased by seed sown as soon as ripe in light soil in a shady place—the seed vegetates the following spring; and also by division after the growth is matured. They are useful for rockwork in partial shade. The early-blooming kinds are available for the spring garden. If grown in pots and plunged where they are required they can be removed when the bloom is past to make room for others. They can be stored away in an out-of-the-way corner, requiring little attention save a little water occasionally until they have matured their growth.

Gageas may not be so attractive as some of our border flowers are; but when a few kinds are gathered together and dotted here and there in shrubberies or sheltered dells they afford an agreeable change. One or two are natives of Britain; and who that has seen *Gagea lutea* in its own home peeping up among the grass with its yellow-green face to the sun in the spring time but will welcome it with the welcome it deserves? This is regarded by some as a rare plant, but it is more local than rare, for where it does occur it is generally abundant.

There are several kinds of this family that have been introduced at different times, but they are very seldom met with in cultivation. *Gagea fascicularis* with its bundles of flowers is a splendid little plant in April and deserves extensive cultivation. Then there is the little pigmy *G. pygmaea* from Spain, asking for more attention than it is at present receiving. *G. villosa* with its shaggy appearance ought to have a place among our selected plants. *G. fistulosa*, the choicest and the brightest of the family, should not be overlooked; it is an acquisition,

and ought to be seen in general cultivation. *G. stellaris* requires to be better known to be appreciated. Then there is *G. sylvatica*, *G. glauca*, and many others, which when gathered together and grown side by side cannot fail to give pleasure to those who have cared for them.—V. R. T. S.

BIRMINGHAM POTATO EXHIBITION.

It will interest exhibitors of Potatoes to know that the Council of the Birmingham Cattle Show have just decided on a most attractive prize list, the prizes offered to be competed for in December next at their great annual Show. The experiment made last year of arranging classes for "types of kinds" was so successful that it has been decided to continue it. Thus Ashleaf Kidneys, known by innumerable synonyms, are to be exhibited in one class; and to Lapstone Kidneys, which are also known by a number of names—e.g., Haigh's Seedling, Pebble White, Headley's Nonpareil, Yorkshire Hero, &c., another class is set apart. Regents or Dalmahoy, or any variety of this class or type, no matter by what name known, are provided for in another class. A class is provided for Paterson's Victoria, another for Vermont Beauty or Brownell's Beauty, another for Snowflake or other white-skinned American variety (including Breese's Climax, Breese's Peerless, American Breadfruit, Early Goodrich, &c.); another for "any white-skinned variety not provided for in the other classes;" and another for "any coloured-skinned variety not provided for in the other classes."

Classes are also provided for three, six, and twelve varieties, left to choice of exhibitors respectively, and in the latter the prizes are so good that we imagine the competition will be severe, for, in addition to £5, £3, and £2 for first, second, and third prizes in money, a cup, value ten guineas, will be awarded to the winner of the first prize, the cup being given by George Wise, Esq., J.P., of Woodcote, Warwick, a gentleman who for some years past has most intelligently and generously encouraged the cultivation of our most important tuber. There are other valuable prizes offered by the leading seedsmen.

The prize list will be ready shortly. Those of our readers who may desire to possess a copy should send their names and addresses to the Secretary, Mr. J. B. Lythall, Bingley Hall, Birmingham.

CULTIVATION OF THE GLOXINIA.

I HAVE often heard it asserted that the *Gloxinia* requires a very high temperature, but this is not so, for I have for several years grown these plants with some success both from leaves and seed under what may be termed cool stove treatment.

I prefer raising plants from seed, and have found the best time to sow the seed is as early in January as possible. It should be sown in pans well drained, using a compost of fibry loam one part, leaf mould two parts, and one part well-decayed cow manure, using a good admixture of sand, but not placing too much on the surface, and by no means using peat or the surface is sure to become covered with a green moss, which is certain destruction to the roots of the seedlings. I cover the pans with a piece of glass, and place them in a cucumber house. As soon as the seedlings are large enough to handle I have some of the same compost prepared, again using pans into which the seedlings are transplanted; then raise them very carefully with a pointed stick, being careful to separate them thoroughly. When large enough, or when the leaves touch each other, it is quite time to pot them into large 60's, being careful that the pots are well drained. After this process I place the plants on a shelf in the cucumber house close to the glass and allow them to remain there till they show flower, and then remove them to a pit kept close until the flowers open. When all have opened I make my selection, throwing the others away. I may add that from Mr. Williams's strain they are mostly always good.

I am very careful about watering. The plants should not be watered till they become quite dry and then give them a good soaking. The grower will find a great advantage by flowering his corms the first year, as he will know what he is growing afterwards, and consequently will not require so much room as those do that do not flower them till the second year. After their blooming season I withdraw water very slowly, not drying so suddenly as is often recommended, as that is the time the corm is perfecting itself, and this must be watched to ensure success the ensuing season. When thoroughly dried off, which

will be the beginning of September, I remove them to a shelf where they do not receive water, but where plenty of atmospheric moisture is afforded, as the main object is to keep the corms plump. I do not allow placing them in a corner under the stage, or some such place, to get them out of the way, as is often done. The house I store them in is kept through the winter months at a night temperature of from 48° to 52°, rising to about 60° during the day. I have found when the pots are out of your notice, and when removed to be shaken out, you will find the corms very much shrivelled, and depend upon it you will never succeed with shrivelled corms. I consider sound corms to be one of the main points of success.

I remove the plants from the shelf early in January, and shake out carefully, not injuring the fleshy roots. In potting this time I use a rather stronger compost. I find the plants succeed remarkably well in two parts good fibrous loam rather fresh, one and a half part decayed manure, if obtainable cow manure, with half a part leaf mould, using plenty of silver sand, but not peat, placing the corms in the same sized pots. I then place them in the Cucumber house until they begin to break freely; they make roots very fast after this time, and their working round the pots is a signal that they require a shift to 82-sized pots. I then place them back again for about ten days, and then remove them to a house having a temperature from 56° to 60° during the night, allowing with sun heat a rise to 70° to 75° by day. As soon as they have filled these pots with roots I give them one more shift into their blooming pots, which is done by the middle of March. By that mode of culture the plants grow luxuriantly, with foliage covering the pots—in fact it is with difficulty that they can be watered. They measure fully 2 feet across, and are just throwing a fine lot of flowers. I may add that they have all the light procurable, for I never shade them until in flower. I have also a strong objection to the use of the syringe, but they cannot have too much atmospheric moisture.—J. PITHERS, *The Gardens, Munster House, Fulham Road.*

[We have seen Mr. Pithers's *Gloxinias*, which are very superior in every respect.]

DISTRIBUTION OF HEATING SURFACES.

SINCE the introduction of heating by hot water and cheap glass horticulture has progressed rapidly, especially in the higher cultivation of tender flowers and forced fruits. I do not wish to be understood as attributing the advance solely to cheap glass and a better system of applying artificial heat, but am fully prepared to award advanced skill its due. We are nevertheless perforce to ask, What is modern skill without modern appliances? Advanced skill linked to heavy rafters, light-obstructing sashbars, small panes of glass with broad dirt-holding laps, ventilation admitted by wide-distant gaps, and imperfectly-formed flues cannot produce perfect results.

To flue-heating I have always had a decided aversion. Merit it may have, but it compares disadvantageously with heating by hot water. To the construction of light airy houses no objection can be made on the score of economy as compared with "all wood" structures of a former date; but to heating with flues and hot water we have to face an increased expenditure by adopting the latter as compared with the former. Though heating by hot water entails a considerably greater first outlay of capital, yet we are nevertheless bound to admit the claims of hot water to be very much higher in efficiency and in resultant economy than the most approved modes of flue-heating. There is not the least doubt of the greater first cost of heating a house by a hot-water apparatus than the heating of the same, or a similar house, with a flue or flues, and it is not questioned but that the working expenses will be as great by the hot-water heating as by the flue. To arrive at the relative values of the two systems we must seek them in the results. If it can be shown that a flue costing only a third the cost of a hot-water apparatus is worked at no greater expense, and is as efficient as hot-water heating, then we are wrong in our estimate of the values of the two systems; but I must submit there is a wide difference in the work performed—in its higher quality as shown by the more healthful plants, and more certain and safer performance. It is not assumed that hot-water heating is infallible, for boilers or pipes crack sometimes, but it is free from many of the objections which may be taken to flue-heating.

Some of the many failings of flue-heating are:—1. A surface heated to a temperature prejudicial to plant life at its entrance to the structure. 2. From its many joints the

liability of its parts to crack, admitting by those crevices the noxious vapours to mingle with the atmosphere and tell prejudicially upon the health and vitality of the plants. 3. The liability of fouling with soot, diminishing the power of the flue surfaces to the heat passing through. 4. The danger of the soot igniting, and the extreme uncertainty of the flue not giving way under the great heat consequent on firing of the soot. I might tell of the uncertainty of action when a sudden frost demands the use of the fires—the smoke and heat declining to go along the flue, or very tardily, giving out smoke from every crevice it can find to make its exit through, and keeping the attendant breathing as best he can in smoke for hours in hope that he may defy frost and satisfactorily present himself to his superior or employer. I have had such an experience of flues smoking, overheating, and breaking down as to detest their sight and mention, and am surprised that flue-heating at this day should have its advocates and (as I notice from your correspondents columns) its adopters, but am gladdened to notice your replies show you are no advocate of them, or only for small houses, and not always for them, for you oftener direct to heat with hot-water pipes than flues.

With this "parting kick" at flues I have to consider that in the distribution of heating surfaces in horticultural structures the surfaces are in heating by flues and hot-water pipes materially diverse, being very nearly of a uniform temperature throughout the extent of pipes, not having a difference of more than 2° in every 100 feet, and at no point can it be higher than boiling (212°), and this only in case of overheating; but on the contrary, an overheated flue (red in the dark) attains a temperature of 752°, its lowest ignition in the dark being 635°. These are of course extreme cases, but as they do occasionally occur it is necessary to note them with a view to their avoidance, for the higher the temperature of the heated surface the more speedy is its effects upon the atmosphere. Where the flue is too quickly and too highly heated the moisture is by the ascending heat driven against cooler surfaces, to be by them condensed; evaporation is much more rapid, which applies not only to the plants and the atmosphere, but to the soil. In heating by flues it is common to have the furnace in a shed, or so that it can be fed from that side, the heat and other products of combustion being taken across the end, along the front, across the other end of the house to the back wall, and if the house were small along the back of the house to the point from whence it started, and making its exit by a chimney in the back wall.

Though we pride ourselves on our advancement we have made no improvement on the distribution of flue or hot-water-heated surfaces. We take the hot-water pipes along the ends and front of lean-to's and along the sides of spans; the object being, that as heat ascends more quickly than it is diffused laterally, to have the radiating surface at the lowest point, from the known fact that it will rise to the highest. With this arrangement I am not going to find fault: it is probably the best arrangement of the hot-water pipes when the object is not to maintain a higher temperature than will ensure the safety in severe weather of greenhouse plants, or to assist Vines at starting and ripening their fruit, to save the blossom and young fruit in Peach or orchard houses from frosts in spring, and the ripening of the crop and wood in those structures if necessity so requires; but I must take exception to this arrangement of the pipes being suitable when a high temperature is required and when forcing is carried on at the dulllest and coldest half of the year. The circumstances are very different in the two cases. By the former the heat by which growth is prompted is for the most part natural—solar—admitted by the glass, and by the same means retained, the artificial heat being auxiliary and not depended on when growth is proceeding rapidly.

It is all very well to tell us how many feet of 4-inch piping at a given heat will enable us to maintain the temperature in a given structure. It serves a purpose, no doubt, to put all the pipes at one side of the house or both sides, placed alongside and over each other—just about as good as the concentration of the heating medium of a hall in a coil of pipes hidden by an ornamental screen; but the purpose served is certainly not what vegetation has by nature afforded—viz., an equalisation of the heat transmitted. There is a limit even to the radiation and penetration of natural heat; and in that of artificial its limit of penetration even in an enclosed structure is to be found, for a hot-water pipe giving off heat at 160° will have at a foot distance from the pipe a considerably lessened temperature, and materially decreased one at 6 feet, decreasing

all the while it advances from its source. There is of course such a commingling of the heated with the cooler air, the ascending heated air being replaced by an under current of unheated air to supply its place as to make no difference as shown by a thermometer 3 feet from the heated surface as one at 20 feet, the temperature being solely derived by artificial agency and the atmosphere confined. It is different when natural heat is added to the artificial: the temperature rises, heat accumulates, and at the highest part of the house. This is so well known that everybody admits the necessity of top-air-giving before recourse is had to the lower or side ventilators.

When only a low temperature is required, the artificial heat being only used to exclude frost or auxiliary to natural heat during the active growth of the plants, it is well to have the hot-water pipes along the sides or fronts of the structures, and ventilation at the top, air being there first admitted, and afterwards by the front or side lights. There has been objection taken to even this, some going so far as to advocate the admission of side or front before top ventilation, alleging that the egress of heated air is too rapid, the accumulated heat being too suddenly diminished by the influx of cold air. To this doctrine I can see no objection in the case of span-roofed houses. Moderate side ventilation, or even full, may secure air to the structure without the evils of an out-draught of heated and an in-rush of cold air; but in the case of lean-to's I altogether differ from that recommendation, being persuaded that the heat in the main being due to natural agency, it is best parted with where its highest temperature is found. There can be no possible objection to avoid an excess of temperature at the highest part of a span-roofed house by a lantern with side lights. It is not the passing-out of the heated air, but the rush-in of cold that does the mischief.

The principle of ventilation is about much the same as regards its distribution as that observed in the disposition of the hot-water pipes. In ventilating the highest part of the structure is available for letting out an excess of accumulated heat or preventing the temperature rising too high, with the addition of side or front lights to open, to be used when the upper ventilation is insufficient. We let out the heat where it is most when naturally generated, and fix the pipes or means of artificial heat where the greatest cold in even a heat-retaining structure is found. It has been so in all cases of heating alike with flues or with hot water—the heat generated at the lowest point, and as invariably let out at the highest. Such is not the case, it need hardly be stated, with natural heat, though it be, nevertheless, certain we have the greatest heat and also extreme of cold at the earth's surface, but the radiation of heat is from all parts alike, its diffusion general, affording an equable temperature without that sudden transition from a close moist atmosphere to freer and drier blasts of cold air alternating with heated air.—G. ABBY.

BEDDING GERANIUM MRS. HALIBURTON.

MANY pink varieties have been introduced, and about the best character that could be appended to them is that they are "improvements on Christine." Few, if any, however, have borne out that character, and Christine is yet used almost as extensively as ever. But it is likely that the good old pink is fairly beat at last, and the variety that will enjoy this honour is Mrs. Haliburton. It possesses the free-flowering, short-jointed, hirsute-leaved characteristics of Christine, but is decidedly richer and deeper in colour. It is in fact Christine intensified. The flower approaches almost a magenta tinge, and the plant forms a rich and effective bed. Moreover, it is not quite so prone to seed as its progenitor, and is altogether a recommendable variety. Mrs. Haliburton was raised by Mr. Bland, late gardener to Lord Kilmorey, and distributed by Mr. Kinghorn of Sheen Nursery, Richmond, the raiser of Christine, Flower of the Day, and other staple bedding Geraniums. I saw Mrs. Haliburton in several gardens last year, and in every case it gave great satisfaction.—J. W. B.

A TRIO OF WHITE-FLOWERED CAMELLIAS.—Amongst white Camellias the following are, I think, not so generally cultivated as their merits deserve—Duchesse de Berri, a beautiful-formed exquisite flower with small foliage; Montironi, a fine large flower with handsome foliage; and Mrs. Abby Wilder, an American-raised seedling of good substance and handsome foliage. These have all flowered well with me this season, and

I recommend that they be added to all collections of the white-flowered section of this most lovely tribe of plants.—D., Deal.

TRIAL OF POTATO PLANTERS.

A TRIAL of Potato-planting machines has taken place, under the auspices of the Highland and Agricultural Society, in fields at Powburn, and on the farms of Liberton Mains, Midlothian. The weather was of the most propitious description, and there was a considerable turn-out of the members of the Society and gentlemen interested in the experiments.

There were in all five machines brought forward for trial. Mr. Alexander Guthrie, Craig, Montrose, had a machine which had already been tried by the Highland and Agricultural Society, but has since been improved by being fitted up with apparatus for expelling superfluous Potatoes from a series of cups fixed to a circular disc, and which are constructed to lift only one Potato at a time. Another improvement consisted in the substitution of two diagonal front wheels, to embrace, as it were, the furrow, instead of one which ran on the top. Ferguson's patent, manufactured by Mr. Murray, Banff, was a machine constructed on the same principle as the last, with cups for lifting and depositing the Potatoes; but arranged on a different plan and furnished with mechanism of a different device for ejecting the superabundant tubers. Messrs. Dewar and Killas, Dundee, exhibited a machine differing in principle from the above two, and of a very peculiar and ingenious design. The leading feature of this machine was a series of equidistant piners attached to an endless revolving chain, and controlled by springs, by means of which a Potato was lifted, grasped, carried forward, and, by a clever contrivance, deposited in the drill at regular intervals. The above three machines planted double drills. A machine designed and constructed by Mr. C. Hay, North Merchiston Works, was adapted for sowing only one drill at a time, but was made to be fitted up with an invention for distributing manure. The working part of the machine consisted of a broad diagonal iron disc, the circumference of which (on the flat side) was perforated by a number of holes, these holes on the disc being made to revolve through a heap of Potatoes, carrying one tuber in each, and letting it fall through an aperture in a second disc parallel to the first at its nearest contact with the ground. The next machine was an American invention called Aspinwall's Patent, and was exhibited by Messrs. Robinson & Co., Liverpool. The machine is simple in its construction, and consists of a system of radical revolving spears of peculiar arrangement, which pick up the Potatoes from the hopper and carry them forward to the point of discharge, where they are detached from the spear-points by means of an application of the inclined plane. This machine was a simple drill, but can be made double. Each of the machines were fitted with an appliance for regulating the distance between each tuber. The trial was commenced in a field near Powburn, where, however, the ground not being prepared for the experiments, the machines were transferred to a field on Liberton Mains. They were here subjected to a series of trials with out and uncult seed, a number of gentlemen inspecting the work done, which was generally pronounced satisfactory.

The Judges were Mr. Hutchison, Carlisle; Mr. Swinton, Yeeter; Mr. Park, Engineer to the Society; and Mr. Monroe, Fairmington. No decision was come to on the ground.—(Irish Farmers' Gazette.)

PLANTS FOR PERFUMERY.

THE following extract from Dr. Schomburgk's "Flora of South Australia" will answer "A CULTIVATOR OF HERBS:"—

"If we consider that British India and Europe consume about 150,000 gallons of handkerchief perfume yearly, and that the English revenue for Eau de Cologne alone is about £8000 a-year, and that the total revenue for imported perfumes is estimated at about £40,000, and that one great perfume distillery at Cannes, in France, uses annually about 140,000 lbs. of Orange blossoms, 20,000 lbs. of Acacia flowers (Acacia Farnesiana), 140,000 lbs. of Rose flower-leaves, 32,000 lbs. of Jasmine blossoms, 20,000 lbs. of Tuberoles, together with a great many other sweet herbs, we may judge of the immense quantity of material used for perfumes. Most of the flowers which provide the material for perfumes grow luxuriantly with us—namely, Mignonette, Verbena, Jasmine, Rose, Lavender, Acacia Farnesiana, Heliotrope, Rosemary, Peppermint, Violets, Wallflowers, Laurel, and Oranges, from which alone three

different scents are produced. These plants thrive probably in greater perfection here than in any part of the world. No doubt South Australia should be a perfume-producing country. We see flourishing here some of the most valuable scent plants. We have the Wattle, Myall Wood, and other native plants, yielding valuable scents. But two things are needed to encourage the enterprise: first, freedom of the still, so as to license distilling in vessels of less than twenty-five gallons capacity; and, secondly, the *bona fide* advertisement of a capitalist manufacturer, that he will buy any quantity of specified flowers, leaves, roots, or plants, at a marketable price. Then some farmers might be tempted to plant a few acres of Lavender or Mint, another Geraniums or Rosemary, another Aniseed, whilst plantations in hedgerows, or such like places, of Roses, Cassia, together with contributions from gardens, would lay the foundation for an export trade. Then it must be also noted that whatever the value which the plants yield in flower, fruit, leaves, and stems, it is increased threefold under manufacture, and this manufacture consumes other local produce called into existence by it, such as olive and other oils, fats, alkalies, wheaten flour, colouring matter, pottery, and glass ware, which combine to make the farmers and the manufacturers contribute largely to the maintenance of population and the wealth of the perfume countries.

"To advance this highly remunerative industry, as I have already mentioned, a modification in the law of licensing stills should be made to *bona fide* perfume-distillers, as the present law restricts stills to a range of capacity between twenty-five and fifty gallons. Perfume stills for the finer perfumes are best at about eight to ten gallons. It is therefore to be hoped that our legislators would take this into their earnest consideration. To encourage the development of new industries, every facility with respect to distillation of perfumes should be given, even at the sacrifice of a small amount of revenue. To show you the value of perfumes to the countries adapted for their production the following table, compiled from the publications of Piesse & Brande, and the "Cornhill Magazine," October, 1864, may show why it is so:—

"One acre of Jasmine plants, 80,000, will produce 5000 lbs. of flowers, value 1s.	£350
One acre Rose trees, 10,000, will produce 2000 lbs. of flowers, value 9d.	75
One acre of Orange trees, 100, at ten years old 3000 lbs. of flowers, value 6d.	50
One acre of Violets, 1800 lbs. of flowers, value 2s.	180
One acre of Cassia trees (Acacia Farnesiana), 303, at three years, 900 lbs. of flowers, value 2s.	90
One acre of Geranium plants, 15,000, 40,000 lbs. leaves, producing 3 ozs. of distilled otto per cwt., at 5s. per oz.	300
One acre of Lavender, 3547, giving flowers for distillation, value.....	30

"Further, without knowing the produce per acre, I add the otto per cwt. which the following plants are said to yield:—Rosemary, per cwt., will yield 24 ozs. of otto oil; Aniseed, 35 ozs.; Caraways, from 3 lbs. to 4 lbs. 12 ozs.; Fennel seed, 2 lbs.; Patchouli, 28 ozs."

AN AMERICAN'S VISIT TO COVENT GARDEN MARKET.

BEING long anxious to visit this world-renowned place for a display of vegetables, I accordingly paid it a visit on Saturday morning in January last. With the produce which the market gardens around London brought to this market I was astonished at its excellence; but with the place they have to sell it in I was disappointed. It is far too small for the immense traffic, and, together with the narrowness of the streets leading into it, make it altogether a mean place for the purpose. The business is mostly done in the morning between six and nine o'clock, when but little traffic of any other kind is being carried on, especially during winter; but at the same time the large waggons used for conveying the produce are so closely packed together that it is very difficult for those on foot to push their way through; and very disagreeable for those having the work to do, getting their vegetables off the waggons and properly disposed of.

The flower market is much superior to the vegetable department. It is a large building so arranged that one can move about and examine the plants and flowers with a good deal more comfort than in the vegetable market, and, undoubtedly, with a good deal less of rebuff to the stranger than in the latter place. The buyers and sellers appear to think they have an exclusive right during the early hours of the morning, and that strangers should stand outside, and, under no pretence

whatever, ask any questions about what they see, except the prices of the different vegetables. In the flower department everyone appeared very anxious to inform us what we asked them.

Upon the whole, I really think London—the Empire City of the world—should possess a vegetable market something in keeping with her great size and immense wealth.

Turnips were in large quantities and of good quality, but not very large in size; they sold for 4d. per bunch. Carrots were splendid, not extra large, but clean and free from canker; 6d. per bunch. Rhubarb at 1s. 6d. per bundle was finely coloured although forced, which is what is not always seen, and what many gardeners do not deem requisite to have in forced Rhubarb; but what is not well coloured is not well flavoured. Plenty of air and light are necessary in obtaining colour. Green Peas at 1s. 6d. per lb. were not very plentiful. Considerable quantities of new Potatoes were in the market, and for about 1s. 6d. per small basket. A good many Tomatoes I saw, but of a quality which would not be much relished by Americans, who are so much accustomed to such fine fruit at home; they brought from 1s. to 2s. per dozen. Seakale was in splendid condition, thoroughly blanched, and therefore very tender; sold for about 2s. per punnet. Asparagus was plentiful and of excellent quality; home-grown brought from 8s. to 10s. per bundle. There were also Cucumbers, Onions in large quantities, Leeks, Celery (mostly red varieties), Lettuce, Endive, Cabbage, Brussels Sprouts, and Cauliflower, which all sold at good fair prices. Taken altogether, the vegetables were the best and in larger quantities than I had previously seen anywhere.

The fruit was also very good and in large quantities; some excellent Grapes of Lady Downe's and Black Alicante varieties. These are the two best kinds we have for hanging late, but it appears to me the true Alicante is not always seen bearing the name. It is a fine-keeping and good-looking, but not an extra-flavoured Grape. They ranged in price from 2s. to 6s. per lb. Plenty of foreign Grapes are sold at much lower prices. There were some good specimens of Ne Plus Meuris, Easter Beurré, and Beurré Rance Pears, large lots of American Apples, plenty of Oranges, Figs, Nuts, Melons, and Pine Apples.

The plants were mostly growing in 6-inch pots, but were well grown and free from insects. Those in flower appeared as if their blooms had just opened, so as to be in their best that very day. The plants of Azaleas were grown mostly as standards, and the smallest of the plants full of blossoms, both single and double varieties; they sold for from £2 to £3 per dozen.

Bouvardias were not in such good condition as I have often seen some of the American gardeners having them; they sold for about 12s. per dozen. When visiting the large plant establishment of Messrs. Hugh Low & Co. I saw a great quantity of the different varieties of Bouvardia growing in pots flowering very freely, but what drew my attention most was the large size of trusses they had. *Primula sinensis* astonished me to see the excellent strains of some of the lots exposed for sale here. It is very strange that some of the enthusiastic florists throughout the United States have not got into the cultivation of some good strain of *Primula* and raise seed for home demands. As it is, gardeners in want of fine kinds have to import seed from England, and although the highest price is paid for it, far superior strains are seen for sale in Covent Garden than any I have ever seen raised from any of our "imported" seed. The plants have foliage of fine substance. The flowers, which are very large, are produced in large trusses, and rise above the leaves just high enough to make them look well. The fine strains brought 12s. per dozen.

Poinsettia pulcherrima is grown in 6-inch pots. The plants are very dwarf, and the bracts very large. Some of the white one—alba—are for sale, but not nearly so abundant as the red one; they brought about £1 per dozen. Tulips were in variety and very fine. They are planted five bulbs in a pot, and sell from 9s. to 18s. per dozen. Hyacinths are grown singly in pots, and bring about the same price, except Roman Hyacinths, which sell for as much as 30s. per dozen. There was a great show of the different colours of Cyclamen, selling for from 12s. to 18s. per dozen.

Besides the above there were large lots of Heaths in variety, Begonias, *Echeveria retusa floribunda*, *Cyperus alternifolius*, *Epiphyllums*, *Dracenas*, *Mignonette*, *Pelargoniums*, and *Ficus elastica*. Out flowers were not so plentiful as are seen in the florists' establishments in the United States. I have seen in

a single establishment there more flowers at one time than there were in all Covent Garden Market. Some of the principal were Carnations, twelve blooms, 2s. to 4s.; Gardenias, twelve blooms, 12s. to 18s.; Eucharis, twelve blooms, 6s. to 18s.; Stephanotis, twelve sprays, 9s. to 18s.; Tuberoses, per dozen, 4s. to 9s. Such kinds as Cyclamens, Heliotropes, Mignonette, Pelargoniums, Primula, Spiraea, Violets, and Roses sold a good deal cheaper.—(*American Gardener's Monthly*.)

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

On April 6th we were able to write of fine weather—warm and sunny by day, with a night temperature ranging from 40° up to 47°, and the ground in excellent condition for working—but what a change! It will be some time before the night of 13th of April is effaced from the memory of the unfortunate gardeners who had to pack Orchids and other tender plants after the Exhibition closed at 10 p.m. at the Royal Aquarium, Westminster. A freezing temperature with blinding snow falling all the time might have been seasonable at Christmas, but was not the usual concomitant of Easter.

KITCHEN GARDEN.

We are glad that our own work in the kitchen garden is well forward, but not so well pleased that the early Potatoes, which were making strong healthy growth on an east border, have been subjected to 5° of frost, and also had a mantle of snow thrown over them. They have received a very serious check, and the crop will be much deteriorated in quality. Early Peas and Beans still look promising; their sheltered position and the naturally dry soil is much in their favour. Cauliflowers that were planted out from cold frames about the middle of March look very promising considering the rough treatment they have received. It would have been much better to have planted them out under hand-lights, so that they would have been gradually hardened-off, but that we could not do. They were planted in deepish drills, which protected the plants to a limited extent. Had the weather been fine, the plants raised from seeds this year would have been ready for planting out. These plants have been pricked-out in boxes, and are now out of doors under the shelter of a hedge. Those who require successional crops of Cauliflowers through the summer should now sow seeds on a warm sheltered border. We find the house sparrows are very fond of the young plants, but they can easily be protected by placing some close netting over the bed; or the birds may be scared for a time by placing a slender rod about 6 feet long in the ground in a slanting position. A large Potato should be stuck full of feathers and have a string attached to it, and the other end of the string fastened to the elastic rod. If the Potato hangs about 6 inches from the ground it will swing to and fro in the wind. The above method of scaring sparrows is an old one, and should be tried if other means fail.

It is now a good time to see to sowing, planting from cuttings, or dividing the roots of herbs. Of Sage it is as well to grow the green and purple sorts. It may now be propagated by slips off the roots, and succeeds best on a dry sloping border from which water runs freely. Marjoram should be sown in a box and be placed in a frame, to be transplanted in fine weather into rows. Pot-Marjoram should be increased by division. A pot or small pan of Sweet Basil may also be sown, and treated the same as recommended for Knotted Marjoram. Mint is increased by division. A pot or two is easily lifted for forcing early in March. We had it out of doors about the end of that month this year.

Seeds of both sorts of Thyme may be either sown or the roots of established plants may be divided. Thyme grows freely in almost any soil. Tansy increases very rapidly by division, and is of the easiest culture. Summer and winter Savory may also be sown in light soil under a hand-light, the seedlings to be transplanted; old plants may also be divided. Tarragon should be increased by division, and should be planted in the position recommended for Sage. A few plants of Fennel may be put out in some out-of-the-way corner, or a pinch of seeds may be sown in a similar position.

CUCUMBER AND MELON HOUSES.

Under ordinary management there will be abundance of Cucumbers in houses devoted to their culture. It is only necessary to keep the leaves free from insect pests and to thin-out the shoots rather freely; instructions for both have been given in previous numbers. Cucumber plants root very freely in soil that is moderately moist, but it must not be soddened with water, and too much mould is an evil; a foot of soil is better than 2 feet, and the border had better be 3 than 6 feet wide. When the borders are restricted, the plants are much benefited by the border being surfaced with dressings of good loam and manure in equal proportions. An occasional watering with soot water causes the fruit to be of a dark green colour.

Melons which have set their fruit should also be freely watered at the roots, and the leaves should be syringed twice daily in the

morning, and again when the house is closed in the afternoon, until the fruit is very nearly at the ripening stage. Melons require as much water at the roots and moisture in the atmosphere as Cucumbers. When the fruit is ripening a drier atmosphere with rather more ventilation is what is best suited to them. Where the above are cultivated in frames air should be admitted very cautiously at present, and thick coverings be placed over the glass at night to retain the heat.

Figs in pots may also be freely syringed twice daily, and are the better of a surface-dressing of rich soil, say two parts of turfy loam, one of rich decayed stable manure, and a sprinkling of bone dust mixed with it. This should be placed on the surface, and be pressed down moderately firmly with the hand. In a wonderfully short time this dressing becomes filled with healthy active rootlets, which speedily improve the leaves and fruit.

Pines.—The magnificent fruit of Smooth-leaved Cayennes now to be seen in nearly all the fruit shops in London puts us out of conceit with our home-grown productions. Still there are those who would rather have fruit of their own growing placed upon the table than that of foreign growth, even if the former was not equal to the latter in appearance. Growing for market is a different thing, and it is quite certain that the time for Pine culture for profit has in Britain come to a close.

GREENHOUSE AND CONSERVATORY.

Hyacinths and Tulips have been cleared out to make room for other plants. *Primula amona* is a very useful and distinct plant for greenhouse culture, and is now in full beauty. *Cinerarias* have been and are still very fine with us. They are the produce of a small packet of seeds sown about this time last year. We have given up growing the named sorts, as they are so apt to die off during the summer. The plants are the better of occasional waterings with weak manure water. Cow manure is as good as any. It is necessary to keep the plants close to the glass to have them of good quality. If it is intended to grow them for exhibition the shoots must be trained down, which will have the effect of forming dwarfier plants with much larger heads of flowers. We have just now sown the seeds for next year's flowering plants.

One seldom sees the common *Hydrangea* well grown in aristocratic gardens, but it is a plant of very easy culture, and even if it was more difficult it should be grown in every garden. Large plants with dozens of heads of flowers are objects of extreme beauty in large conservatories, and certainly few plants are more useful and lasting for decorative purposes than the fine plants with single heads of flowers grown and bloomed in 5-inch pots, and sold in Covent Garden Market. Cuttings may now be put in and placed in the hotbed, where they will soon form roots. They must be potted-off as soon as rooted, and the plants be placed again in the hotbed until established; afterwards they may be repotted into 5 and 6-inch pots and be grown near the glass in a pit or frame. A good potting material is loam, leaf mould, and a little sand.

Camelias in pots. To keep up a succession of these beautiful flowers the period of their production must be regulated at this season. The plants that finished flowering about Christmas will now have completed their growth, and the flower buds will be formed. As soon as this has taken place they must be again removed to the greenhouse, or any house where they may be shaded from the direct rays of the sun. A lean-to against a north wall is a very suitable structure for them during the summer months; and as the growths of later-flowering sorts are completed they may be removed there also.

Azaleas require similar treatment. They also do well in a steaming atmosphere and a temperature at night of 65°. The plants must be shaded from sunshine and be syringed twice daily.

It is not possible to keep the greenhouse and conservatory gay with flowering plants unless there are houses in which to place the plants after the flowering period is over, and in which to place young growing specimens. Stage and Fancy Pelargoniums must now be thoroughly cleansed from green fly, else the flower trusses will be much injured; for these plants cannot safely be fumigated when they commence flowering.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

ALEXANDRA PALACE. Flowers, May 5th and 6th. Roses, July 7th and 8th. GLASGOW. May 10th, and September 13th and 18th. Mr. F. Gilb. Doughall, 167, Canning Street, Sec.

WESTMINSTER AQUARIUM. May 10th and 11th, May 30th and 31st, July 5th and 6th.

CRYSTAL PALACE. Flower, May 19th and 20th. Rose, June 16th and 17th.

TYNENBON. May 24th and 25th. Messrs. A. Payne and J. Mills, Hon. Secs.

UNDERGILF. May 31st. Mr. T. H. Clough, Hon. Sec.

MANCHESTER (Grand National). June 2nd to 8th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.

SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fudge, 89, York Street, Sec.

SOUTH ESSEX (LEYTON?). June 18th. Mr. G. E. Cox, Wilmot Road, Leyton, Sec.

EDINBURGH (Scottish Fanny Society's Show). June 16th. Mr. N. M. Welsh, 1, Waterloo Place, Edinburgh, Sec.
 COVENTRY. June 19th. Mr. T. Wilson, 8, Portland Terrace, Sec.
 MAIDSTONE (Roses). June 21st. Mr. Hubert Bansted, Rockstow, Maidstone Sec.
 FARNHAM AND SOUTH HAMPSHIRE. June 21st. Mr. H. Smith, Sec.
 SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.
 KILNTER (Roses). June 23rd. Mr. T. W. Gray, Hon. Sec.
 BRIGATE (Roses). June 24th. Mr. J. Payne, Treasurer.
 LEEDS. June 25th, 26th, and 28th. Mr. James Birkbeck, Delph Lane, Woodhouse, Leeds, Sec.
 WEST OF ENGLAND (HEREFORD). Roses. June 29th. Rev. C. H. Bulmer, Credenhill, Sec.
 RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.
 FROME (Roses). June 29th. Mr. A. R. Bailly Hon. Sec.
 OXFORD (Roses). June 30th. Mr. C. B. Ridley, 115, Aldate's, Hon. Sec.
 MAREDN. July 1st. Mr. J. H. Edmondson, Hon. Sec.
 ROYAL CALLEDONIAN HORTICULTURAL SOCIETY. July 6th and September 18th.
 SOUTHPORT. July 6th, 6th, 7th, and 8th. Mr. E. Martin, Sec.
 NEWARK (Roses). July 6th. Mr. F. B. Dobney, Sec.
 HELLENBURGH (Roses). July 12th and 18th. Mr. J. Mitchell, Sec.
 WIMBLEDON. July 12th and 18th. Mr. P. Appleby, 6, Linden Cottages, Hon. Sec.
 KILMARNOCK. Roses. July 18th and 19th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.
 TONBRIDGE. July 19th. Mr. W. Blair, Hon. Sec.

TRADE CATALOGUES RECEIVED.

J. Linden, 52, Rue du Chaume, Ghent, Belgium.—*Illustrated Catalogue of Stove and Greenhouse Plants.*
 Louis Van Houtte, Ghent, Belgium.—*Catalogue of Stove and Greenhouse Plants, Roses, &c.*
 William Bull, King's Road, Chelsea.—*Illustrated Catalogue of New, Beautiful, and Rare Plants.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

ARALIAS (S. G. T.).—We cannot attempt to name the varieties of florists' flowers, they are in legions and so nearly alike.

BOTANY OF THE ALPS (R. Burroughs).—"The Tourist's Flora" gives a description of each species. It is published by Messrs. Reeve & Co.

LEUCOPHYTON BROWN SEEDS (A. C.).—Apply to some of the chief flower seedmen.

VALUE OF AN ACRE (B. D. J.).—The Editors regret that they cannot venture to give an opinion, for to render an opinion of any value the place and many circumstances must be known. Consult an estate agent near you.

GERANIUMS (A. B. P.).—The leaves are perfectly healthy, therefore we can give no advice. Bronze and Tricolor varieties are highest coloured when not over-luxuriant.

AURICULA (G. B.).—Many are far superior. The varieties are too numerous and nearly alike for us to name them.

VINES LEAVES SCORCHED (J. L.).—We can only account for the leaves scorching from the pipes having to be kept at a high temperature—"the water nearly boiling," and the house being steamed twice a-day we presume by water sprinkled upon the hot pipes. This and the sunless weather would be sufficient to make the leaves thin and flabby, their tissues speedily drying-up with bright sun and air. The fault cannot rest with the glass, for were it too clear the leaves would scorch in summer as much or more as in winter or spring. We should double the piping, and with careful air-giving we think you will not need to shade the roof. Scorching most commonly arises from the growth in the early stages being made in too close and moist an atmosphere, ventilation not being attended to so as to have the growths firm in texture. If you can keep leaves on the Vines the fruit will ripen. All you want is more air, which it appears you cannot give without more heating surface.

AERIAL ROOTS ON VINES (J. R. Boyd).—It does not show an unhealthy state of the Vines, but rather that the roots proper are in a colder mean than that of the branches, the atmosphere where aerial roots are emitted being close and moist. Leave them until they dry up, as they will when the roots in the border are so active as to meet the demands of the leaves and fruit, and after this out close to whence they proceed. The young canes intended to take the place of the old rods should not be allowed to bear fruit, but the wood should be grown as strong as possible. The greenhouse climber is *Kennedy's monophylla*.

SWEETWILLIAMS (F. M.).—The plants planted last May were probably sown late in the previous year, which would account for their not flowering last season, but if in an open situation they will certainly flower this season.

GRAFTING COLEUS-VARIETIES (D. Drake).—The object in grafting is we presume to have several varieties upon a plant. Side or whip-grafting answers, also elect-grafting, but the plants require to be kept close, moist, and shaded until the grafts have taken. If you have not convenience for keeping close a more certain method is by inarching, which would probably suit you best. A few kinds are Duke of Edinburgh, Princess of Wales, Queen Victoria, Baroness Rothschild, Prince Arthur, and Albert Victor. The best Lobelia for a ribbon border is *L. speciosa* (Veitch's strain), but if you want a very dwarf kind, *L. pumila grandiflora* and *L. pumila magnifica* are good.

PROPAGATING BED OVER FLUE (Dilemma).—It will not answer to have the flue for 6 feet of its length after leaving the furnace 18 inches in width, and the width you propose to have it afterwards is too narrow. The flue ought to be 9 inches wide and a foot deep, the increased width for the propagating bed being quite unnecessary. You have only to take up a 4-inch wall outside the flue, and enclose it to 9 inches above its cover, filling the space at the sides of the flue with rubble, covering the top to a depth of 6 inches, and having a frame with light to cover the bed, and when you put in the frame 6 inches of cocoa refuse for plunging the pots of cuttings, you have what is required. The cocoa refuse may be kept moist by pouring water in moderate quantity between the pots of cuttings.

LILY CULTURE (M. D.).—The potting material should be turfy loam and dry fibrous peat in equal proportions; a fifth part of leaf mould should be added to it and some sharp sand. Drain 6-inch pots well, and place some moss or fibre over the drainage. The compost should be pressed moderately firmly, and a little sand be placed round the bulbs. The top of the bulbs ought to be half an inch below the surface.

SEEDLING SHADDOCKS FLOWERING (*Idem*).—It is singular that all the plants should flower the first year. We have plants seven or eight years from the seed that have not yet flowered. There is no doubt but the plants will grow after this and produce plants, but probably flowers will not show on them again for several years.

GAS TAR FATAL TO ROSE TREES (T. F.).—Gas tar is most injurious to any tree or plant. No wonder the Rose trees were killed by your painting them with it. If there was no hiring for a period when you were engaged, and your wages have been paid weekly, a week's notice to quit is sufficient.

VARIOUS (Mrs. Forbes).—*Primula cortusoides* amena is hardly sufficient it is frequently cultivated in pots as a half-hardy plant, and is improved by that mode of culture. Tea Roses should be pruned this month, but not much if vigorous. *Gloire de Dijon* on its own roots is not more tender than when worked on another stock.

CINERARIA SEEDLINGS (*Inquirer*).—They had all become loose, therefore we cannot refer to the number; one crimson with white-based petals is good.

CLIMBERS FOR CONSERVATORY (Willesden).—Your question is somewhat difficult to answer. If we understand you rightly you require climbers having red, blue, white, and yellow flowers, the roots of the plants being in an outside border, and the plants having some parts of their stems exposed. As a yellow-flowering climber we advise *Marcelle Niel* Rose. We should also plant climbing *Devoniensis*. *Paeiflora cœrulea*, whitish, would also be suitable. *Tecoma radicans* is a scarlet-flowered nearly hardy climber; and *Berberis pinnatifida* coralline, crimson; *Lardisbala biterminalis* is purple; and *Glemis laetiginea*, light blue. The above are nearly hardy, and will grow in the outside border, but the stems should have some protection afforded them in severe weather.

NAMES OF FRUITS (H. S. S.).—We do not recognise the Pear.

NAMES OF PLANTS (W. M. B.).—*Andromeda spinulosa*. (Mrs. Forbes).—The flower is *Saxifraga crassifolia*. The spotted leaf is not identified. (J. S. E.).—*Adiantum concoloratum* latum.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY NEWS.

PROLOGUE.

THE more we move among our poultry friends, and the more we correspond with those who from business arrangements or other reasons are not able to fit about from show to show and yard to yard as much as others, the more do we find that everyone is always ready to drink-in poultry news and glad to have it, and so we purpose from month to month to give any news which we think may interest fanciers and prove of use to our readers generally.

We hear from first-class authority that four Dorking hens and a cockerel which were lately sent to a purchaser from the Micheldever poultry yards of Mr. T. O. Burnell weighed the immense weight of 52 lbs. They had been fed on no especial food, and were merely one of his breeding pens. We do not wonder now that this gentleman's birds possess the huge appearance and immense size that they do at shows.

The Oxford Poultry Show will be held as usual on the last Wednesday and Thursday in October. We learn that the Committee have arranged their dates thus early in order that no other exhibition may clash with their old-established meeting. The schedule is to be better than ever, and there is to be a £10 10s. champion cup for best Black Red cockerel in the Exhibition. There is, we hear, also to be a £10 10s. cup for the champion Dragon, if breeders will promise enough support.

We hear there is a possibility of a new book on poultry, highly illustrated, from the pen of Mr. O. E. Cresswell. We believe the work is already far in progress, but the date of the appearance of the first number depends upon the writer's health and the time he can give to it. We are confident that the work will be highly appreciated whenever it comes by all members of the fancy, as this gentleman is a fancier and exhibitor of close on twenty years standing, and we know no one with a better eye for a bird or anyone of stricter principles.

We have had many letters asking for the continuance of "Les Basses Cours d'Angleterre." We beg to say that they are in no sort of way near their conclusion, but we are compelled during the breeding season to put them on one side. We hope, however, in the course of two or three weeks to find our friends' yards are stocked with early chickens, and that they are once more on view, when we shall continue the chapters.

The reports from the various chicken yards are discouraging, so many have lost their early birds in the recent snow and winds. We hear of as good accounts from the Dorking breeders as from anywhere, but the whole season seems to have been noticeable for the immense number of clear eggs and the difficulty in procuring hardy hens. This latter is a well-known grievance, but this year the hens have left off laying without showing any inclination to incubate, which has made things more difficult than ever.

A Leghorn Club has been started among fanciers of that breed. The President is the well-known fancier Mr. J. K. Fowler of Aylesbury, and the Hon. Secretary Mr. A. Kitchin, who has by his own exertions been the means of increasing this breed so much in this country. The rules seem good and judiciously made, and we may have more to say upon the subject of these little branch clubs later on, for we think Mr. Kitchin has put a very useful project on foot, and we wish him and his friends very much success.

Last year we knew of an amateur who had a £52 10s. pen of Cochins poisoned from eating the berries which fell from a yew tree, and we hear this week of two valuable cart horses worth £68 each being poisoned from eating from a yew tree, and dying within the hour. They were the property of T. Wyndham, Esq., of Dinton House, Salisbury. We would recommend no yew trees being planted in poultry runs, neither would we the Laburnum trees, for the seeds from the latter appear occasionally to cause death.

We hear there is "on the tapis" a movement among fanciers for starting a "broody hen farm." We believe such an institution with judicious management would prove of great value, and be highly patronised by all fanciers.

Mr. John Martin is now managing the poultry yards of the Countess of Dartmouth at Patchull, Wolverhampton, and committees requiring his services as judge should write to him there. We hear, too, that there is a probability of that celebrated Cochinchina exhibitor with the biblical name returning to his old master's services after the autumn season of the present year.—W.

MATING A GOLDFINCH TO A HEN CANARY.

IN ANSWER to "BLUEBELL" the present is a suitable time to pair a Goldfinch to a Canary hen, but the coming months of May and June may be looked upon as the most genial period for success in the breeding of Mules. As to the particular age of the hen Canary before pairing is a matter of fancy. It is immaterial to us whether the hen be a yearling, or two or more years old. The all-important point is vigour and robust condition at the time her services are required. Without good health you must not look for success. A two-year-old hen may certainly be considered to be more matured in constitution, and may be better able to contend with the very changeable and trying weather we sometimes experience in the spring; but it being our rule not to commence Mule-breeding until the latter end of April, a year-old Canary would at that time escape the chances of illness over laying her eggs, which she would otherwise be liable to if paired to a Canary cock and proceeded to nest in the month of March. It is just possible that the cause of infertility of the three eggs might have been caused by the cold weather we have experienced. It does not follow that the next sitting of eggs will be bad. Upon the other hand, not being able to examine your birds, we cannot assure you that the next sitting of eggs may most likely prove fertile.

At this period Goldfinches should be in vigorous health, full of action and song, and supplied daily with their varied food, such as egg mixed with bun crumbs or powdered biscuit, dandelion or small salads, groats, flax seed mixed with the other kinds; but we would not advise the use of groundsel for the reason of its being unfit for the stomachs of cage birds until the season becomes more genial. Included amongst our pairs of birds now up for breeding we have five lively merry Finches full of life, from which we hope to see some good result before the season terminates. Two of the hens have so far progressed as to deposit four eggs in each nest. Perhaps the accompanying notes may interest "BLUEBELL," and for the sake of illustration we will style the two pairs as No. 1 and No. 2. No. 1 hen laid her first egg on the 11th inst., but the Goldfinch (an untried one before this season) made a meal of it for his breakfast. This he repeated the following morning. So far this was proof that Master Goldie could not be further trusted, and he had to take refuge with a hen in another partition ready to go to nest. Since the separation hen No. 1 has laid two more eggs, and is now sitting without any apparent concern for her absent mischievous partner. No. 2 hen, paired to another Finch, deposited her first egg on the 18th inst., and as her partner does not so far possess the bad habit of No. 1 Finch he is allowed to remain. When Goldfinches take kind ways, and do not destroy eggs or pull nests to pieces by piecemeal, it is better to let them remain with the hens, for we have proved them to be as good feeders to the young birds as cock Canaries. With the presence

of such wintry weather, and snow upon the ground over 12 inches deep at the time of the hens laying, we should not be surprised at the eggs proving unfertile.—G. J. B.

THE HEN AND THE HONEY BEE.

A LAZY hen—the story goes—

Loquacious, pert, and self-conceited,
Espied a bee upon a rose,
And thus the busy insect greeted

"Say, what's the use of such as you,
(Excuse the freedom of a neighbour),
Who gad about and never do
A single act of useful labour?"

"I've marked you well for many a day
In garden blooms and meadow clover;
Now here, now there, in wanton play,
From morn to night an idle rover."

"While I discreetly hide at home
A faithful wife—the best of mothers,
About the fields you idly roam
Without the least regard for others."

"While I lay eggs, or hatch them out,
You seek the flowers most sweet and fragrant,
And, sipping honey, stroll about,
At best a good-for-nothing vagrant!"

"Nay," said the bee, "you do me wrong;
I'm useful too; perhaps you doubt it,
Because—though tolling all day long—
I scorn to make a fuss about it!"

"While you, with every egg that cheers
Your daily task, must stop and hammer
The news in other people's ears
Till they are deafened with the clamour!"

"Come now with me and see my hive,
And note how folks may work in quiet;
To useful arts much more alive
Than you with all your cackling riot!"

—(From the German of Galletti, by J. G. Saxe.)

MUSICAL EDUCATION OF CANARIES.—A writer in the *Boston Cultivator* mentions a gentleman who makes Canaries his special pets. One of the birds he has taught to sing "Home, Sweet Home" clearly and distinctly. His mode of instruction is as follows: He placed the Canary in a room where it could not hear the singing of other birds, suspended its cage from the ceiling, so that the bird could see its reflection in a mirror. Beneath the glass he placed a musical box that was regulated to play no other tune but "Home, Sweet Home." Hearing no other sounds but this, and believing the music proceeded from the bird it saw in the mirror, the young Canary soon began to catch the notes, and finally accomplished what its owner had been labouring to attain, that of singing the song perfectly.

ITALIAN v. ENGLISH BEES.

(Continued from page 279.)

AT PAGE 71 of the "Bee-keeper's Text Book" the author states, "We were slow to believe all the good things said of them [i.e., of the Italian bees] by German apianians, until convinced of their superiority by the universal testimony of prominent American bee-keepers, coupled with our own experience." Then follow extracts, of which I select the following:—"All agreed as to the superiority of the Italian to the common black bee."—*From Report of the American Apianian Convention.* "At the Wisconsin Bee-keepers' Convention in February, 1866, the following resolution was passed unanimously:—Resolved, that the Italian (or Ligurian) bee fully sustained its European reputation, and this Association heartily recommends it for general cultivation as being more hardy, vigorous, and fertile, and as a consequence more profitable."

Mr. Langstroth says, "If we may judge from the working of my colonies the Italians will fully sustain their European reputation. They have gathered more than twice as much honey as the swarm of the common bee. This honey has been chiefly gathered within the last few weeks, during which time the swarms of common bees have increased in weight but very little. . . . The prospect now is that I shall have to feed all of them except the Italian."

Mrs. E. S. Tupper of Brighton, Iowa, a noted Western writer on bee-culture, says, "In the summer of 1863 I had but two Italian stocks to commence with. One of these stored 110 lbs. of honey besides giving me three artificial swarms; the other gave me two swarms and stored 96 lbs. of honey; and all the swarms but one partly filled several boxes each. I had that same season fifty-six colonies of common bees, all of which were divided, but not one of which stored a pound of honey, though in the same kind of hives and treated in a similar way with the Italians. That season it will be remembered was very poor."

"In the summer of 1864 I averaged from nine Italian colonies 119 lbs. each. The greatest yield from one hive was as follows: One full swarm taken from it the 15th of May; honey taken in

boxes through the season, 156 lbs., besides four full frames from which to rear queens; the swarm from it stored 80 lbs. in a cap, and on the 15th of July threw off a very large swarm which filled its hive and stored several pounds in boxes. Thus we have 236 lbs. of box honey besides two extra large colonies from a single hive, not reckoning the frames and partially filled boxes. I do not think a colony of the common bee ever did so much in the best season. If so, let us have the record."

Here, then, we have the testimony of public bodies meeting in convention, and, after full comparison of experience and discussion, passing resolutions unanimously in favour of the superiority of the Italian bee. Not only so, but we have the results given us by two of the most eminent and successful apirians in the States of their own trial of these bees in the same apiary along with the common English bee, side by side "in the same kind of hives and treated in a similar way." These results are very striking, and are to my own mind of a nature absolutely conclusive as to the superiority of the Italian bee in America.

The editor continues in his own name—"Having now had [1873] an experience of several years with Italian bees, spending much of our time in the apiary, rearing queens, we find them to possess the following points of superiority over the common black bee:—

"Their individual strength being greater, they fly with less fatigue and are more active and successful in defending their stores against both the moth-miller and robber bees. They gather honey—especially when other sources fail—from . . . flowers which are seldom visited by the black bees. . . . They also work more steadily during the season, even when there is but little honey to be gathered from any source; and it being a well-known fact that breeding keeps pace with honey-gathering, the result is strong stocks, which secure a large product of honey and are proof against the moth-worm and poor seasons. Hence the importance of the above peculiarities cannot be over-estimated, and they account in part for the following characteristic differences between the two races of bees.

"1. The Italian queens are called 'prolific breeders,' as the stocks breed earlier in the season and continue later, casting larger swarms, and swarming on an average about two weeks earlier than the black bees, thereby gaining that much time in the best of the gathering season, and usually swarming in seasons when common bees do not.

"2. They gather much larger stores of honey than the black bee, as proven by the united testimony of eminent apirians both in Europe and America.

"3. In opening a hive, the Italians when pure are much more peaceable than the black bees, and the queen is more readily found, not so much on account of contrast in colour as from the fact that with the workers she usually remains undisturbed upon the combs.

"4. Being more constant workers the Italians are less inclined to rob than the native bees. Being hardier they are longer-lived, winter more safely, and are more inclined to supersede their queens when past their prime. Hence colonies are not so liable to become queenless, and queenless stocks do not so rapidly become depopulated.

"5. Their beauty of colour and graceful form render them an object of interest to every person of taste—hence they attract many visitors."

Thus much for the testimony of apirians across the Atlantic. As to some of the qualities here given to the Italian bee by the author of the "Bee-keeper's Text-Book," I am disposed to believe that "the wish is father to the thought." He has overdone it by claiming too many good points for his favourites, nor have we the same evidence in favour of them as in the case of others; but making full allowance for partiality, there is evidence before us quite sufficient to convince any but the hopelessly prejudiced that the Italian bee has won its way to pre-eminence in America by its intrinsic excellence and superiority.—B. & W.

OUR LETTER BOX.

EGG-EATING COCHIN-CHINAS (*Aberdeenshire Subscriber*).—These bad habits are generally acquired in confinement. If you can give the fowls their liberty, even for a portion of the day, do so. If you cannot you must watch them and frighten them off the nest as soon as they have laid. It is a good plan to get some very hard composition eggs and put them in the nests, and let them lie about in the laying place. The hens peck them till their beaks are sore, and making no impression they give it up as hopeless. Much may be done by watching, and as it is possible that only one does it she may be removed. The culprit may be often detected by seeing the yolk dried and adhering to the side of the beak.

HARD CROP (*A. V. L.*).—Pour a table-spoonful of brandy or other spirit down the cock's throat. If this does not stimulate the crop and enable it in three or four hours to pass the food, you must open the crop in front with a pair of sharp-pointed scissors, remove the mass of food, and stitch up the opening with fine thread.

ZEBRA FINCHES AND ZEBRA PARAKEETS (*M. H.*).—In reply to your questions we presume that the interesting remarks of our correspondent referred to Finches known by the term of Zebra Waxbills, and not Zebra Parakeets, which latter belong to a distinct species of the Parrot tribes, numbering upwards of sixty, and the Grass Parakeets being one of the prettiest of the entire number. They principally inhabit the southern parts of Australia,

and were first introduced into England by Mr. Gould nearly forty years ago, since which period numerous others have been imported. We know of several instances of the Zebra Grass Parakeets having been bred successfully in England, one case in particular by a resident of Fareham. In Australia these birds are also recognised by the term of "Betcherrygah," or "Budgerigar," as called in this country, the latter term being a corruption of the former. The Grass Parakeets are very easily recognised by their lively markings, made up with three colours—green, prettily and very precisely pencilled with yellow and black, and are of coarse plumage. Some what akin to Love Birds the sexes are very affectionate to each other, but they become somewhat vicious if placed with Canaries. Whether this is generally the case we will not assert. However, we will state a case in point of a pair of Grass Parakeets having been pecked up with about a score of Canaries in a large cage for conveyance to an exhibition. When unpacked nearly all the Canaries had been slaughtered. The Parakeets in their natural climate feed mostly upon the seeds of grasses, although they will live apparently contented and happy in their wry abodes upon any seed. They will freely breed in rooms or aviaries if such places be fashioned to their requirements, and this may easily be effected by bringing into use the hollow stump of some decayed tree, with bark or virgin cork for the rest of the make-up. The sexes do not much vary in size, each possessing long tail feathers, and the male bird may be distinguished by the strong blue tint immediately above the upper mandible. In flight they are very fleet, but graceful in action, although somewhat troublesome to capture if they should by chance gain their liberty in a large room or hall.

METEOROLOGICAL OBSERVATIONS.

GARDEN SQUARE, LONDON.

Lat. 51° 52' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Falls.
1876.	Barom. at 1238 and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
April.		Dry.	Wet.			Max.	Min.	In sun.	On grass	
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
We. 12	29.352	40.0	35.4	N.W.	43.9	45.3	50.7	96.1	37.6	
Th. 13	29.580	37.4	34.2	S.W.	48.1	41.0	50.9	73.6	35.4	
Fr. 14	29.741	35.3	34.7	N.	41.3	49.0	59.0	86.1	51.9	
Sat. 15	30.361	48.4	48.5	E.	40.0	56.1	64.1	103.8	36.4	
Sun. 16	30.187	50.0	41.8	E.	43.0	57.5	64.5	112.8	39.8	
Mo. 17	29.637	48.5	48.0	N.N.E.	44.7	49.3	51.8	87.5	41.3	
Tu. 18	29.729	48.3	46.0	S.E.	44.1	57.5	61.4	101.3	35.7	
Means	29.778	48.8	40.1		43.9	50.7	56.0	91.5	41.2	

REMARKS.

13th.—Cloudy at times and very cold; thunder at 2.10 P.M., and with lightning at 2.28 and 2.30 P.M. while snow was falling; very heavy snow at 6 P.M., and at times all day.

15th.—Snow on the ground at 8 A.M., and fresh snow falling at intervals all day.

14th.—Ground white with snow at 8 A.M.; moving at 9, but fine by noon fine afternoon and starlit night.

15th.—Fine morning; very bright afternoon, evening, and night.

16th.—Fine all day, but rather cloudy towards and during the night.

17th.—November darkness from 8 A.M. to 10 A.M., most intense about 9.30, not clearing off till noon; not bright at any time during the day, but very clear at night.

18th.—Cloudy early; frequent very slight showers during the day; barometer very low at night.

The week has been especially remarkable for the frequent fall of snow in the earlier part. Falls have occurred later in the year, but they have usually been of short duration.—G. J. SIMONS.

COVENT-GARDEN MARKET.—APRIL 19.

No improvement to quote since last report. Trade very quiet, scarcely any business doing in best kinds of goods owing to the holidays. A heavy supply of French vegetables of all sorts beginning to arrive.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.			
Apples.....	1	d	6	to 5	0	Malberries.....	lb.	0	to 0	6		
Apricots.....	d	0	0	0	0	Nectarines.....	d	0	0	0		
Cherries.....	lb.	0	0	0	0	Oranges.....	¢	100	6	to 12	6	
Chestnuts.....	bushel	12	0	30	0	Peaches.....	d	0	0	0	0	
Currants.....	1	d	0	0	0	Pears, kitchen.....	d	0	0	0	0	
Black.....	do.	0	0	0	0	dessert.....	d	0	0	0	0	
Figs.....	d	0	0	0	0	Pine Apples.....	lb.	1	0	4	0	
Filberts.....	lb.	0	6	0	9	Plums.....	1	d	0	0	0	
Cobs.....	lb.	0	6	0	9	Quinces.....	bushel	0	0	0	0	
Gooseberries.....	quart	0	0	0	0	Raspberries.....	lb.	0	0	0	0	
Grapes, household.....	lb.	6	0	30	0	Strawberries.....	oz.	0	2	1	0	
Lemons.....	¢	100	6	to 12	0	Walnuts.....	bushel	4	0	10	0	
Melons.....	each	0	0	0	0	ditto.....	¢	100	1	6	to 2	6

VEGETABLES.

		s.	d.	s.	d.			s.	d.	s.	d.
Artichokes.....	dosen	4	0	to 6	0	Leeks.....	bunch	0	to 0	6	0
Asparagus.....	¢ 100	3	0	10	0	Mushrooms.....	pottle	1	0	2	6
French.....	bundle	6	17	0	0	Mustard & Cress	punnet	0	2	0	0
Beans, Kidney.....	¢ 100	1	0	2	6	Onions.....	bushel	2	0	0	0
Beet, Red.....	dosen	1	6	0	0	pickling.....	quart	0	6	0	0
Broccoli.....	bundle	0	1	6	0	Parsley.....	dos. bunches	2	0	4	0
Brussels Sprouts	1 dozen	2	0	0	0	Parsnips.....	d	0	0	0	0
Cabbage.....	d	0	0	0	0	Peas.....	quart	0	0	0	0
Carrots.....	bunch	0	4	0	0	Potatoes.....	bushel	2	6	0	0
Capsicum.....	¢ 100	1	6	0	0	Kidney.....	do.	0	0	0	0
Caniflowers.....	dosen	1	0	4	0	New.....	lb.	0	9	0	0
Celery.....	bundle	1	6	0	0	Radishes ..	dos. bunches	1	0	1	6
Coleworts ..	dos. bunches	2	0	4	0	Rhubarb.....	bundle	0	6	1	0
Cucumbers.....	each	0	4	1	6	Salsify.....	bundle	0	2	0	0
Endive.....	dosen	1	0	2	0	Scaumers.....	bundle	1	0	0	0
Fennel.....	bunch	0	8	0	0	Seakale.....	basket	1	6	0	0
Garbs.....	bunch	0	0	0	0	Shallots.....	lb.	0	0	0	0
Herb.....	bunch	0	8	0	0	Spinach.....	bushel	4	0	0	0
Horseradish.....	bundle	4	0	0	0	Tomatoes.....	dosen	0	0	0	0
Lettuce.....	dosen	6	0	1	0	Turnips.....	bunch	0	4	0	0
French Cabbage	1	d	0	0	0	Vegetable Marrows.....	0	9	0	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	APRIL 27—MAY 3, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	Days.	m. a.		
27	Tu	Royal Horticultural Society of Ireland—Spring Show.	59.5	55.7	47.5	4 40	7 14	5 59	morning.	5 59	morning.	5 59	morning.	3	2 30	118	
28	F	Royal Institution at 8 P.M.	60.8	57.5	48.3	4 38	7 16	6 59	0 19	6 59	0 19	6 59	0 19	4	2 40	119	
29	S	Zoological Society (Anniversary) at 1 P.M.	60.5	57.5	49.0	4 37	7 18	8 17	1 15	8 17	1 15	8 17	1 15	5	2 48	120	
30	Sun	2 SUNDAY AFTER EASTER.	61.0	59.1	50.1	4 35	7 19	9 44	2 15	9 44	2 15	9 44	2 15	6	2 56	121	
1	M	Royal Botanic Society—Exhibition of Messrs. Jackson's Clematises. Brussels International Show.	61.4	59.2	50.8	4 33	7 21	11 12	2 19	11 12	2 19	11 12	2 19	7	3 4	122	
2	Tu	[man's Clematises. Brussels International Show.	62.7	59.1	50.9	4 31	7 23	10 56	2 25	10 56	2 25	10 56	2 25	8	3 11	123	
3	W	Royal Horticultural Society—Fruit and Floral Committee at 11 A.M.	62.4	62.2	52.5	4 29	7 24	1 57	2 49	1 57	2 49	1 57	2 49	9	3 18	124	

From observations taken near London during forty-three years, the average day temperature of the week is 61.0°; and its night temperature 58.0°.

PROLIFIC VINES.



IN the autumn of last year I read in your columns an account of Mr. Ball's gardens at Cleveland House. To me the most interesting portion of the description was not that relating to the elaborate carpet bedding, but that relating to the promising young Vines. I read "W.'s" remarks the more attentively, knowing that he has had unusual opportunities for obtaining an intimate knowledge of Vines, and for many years has been identified with their successful culture. When he described the young Vines at Cleveland House as having perfected wonderful canes and likely to be heard of again, I did not think that it would fall to my lot, and especially so soon, to remark on their productiveness.

In the report alluded to your correspondent suggested that as the Vines were planted closely the greatest quantity of fruit in the shortest time would be obtained by cutting every alternate cane down to the bottom of the rafters, leaving the other rods nearly their full length, and allow them to bear heavily.

Mr. Legg, the gardener, it appears, perceived the force of the suggestion, and carried it into effect, having previously taken especial pains to ripen the canes thoroughly by the aid of fire heat applied to the houses in autumn. The canes were, therefore, left 14 to 15 feet long; they were stout, having prominent eyes, and contained the slightest speck of pith when pruned. These Vines in the late house have now made lateral growth of a foot long, the eyes having pushed with perfect regularity, and are showing the most extraordinary crop—the greatest number of bunches for the age of the Vines that I have ever seen or heard of. That statement, however, scarcely conveys an intelligible idea, and to make the matter plain I will take one Vine as an example, remembering that it is the first season's cane and the first time the Vine has showed fruit.

On this Vine may be seen ninety-four bunches. That was its state on the 21st inst. when I called on Mr. Legg, but since then a number of the "shows" have probably been removed.

That Vine is a sample of the other Vines. Every lateral contains four or five bunches: they commence showing at the second leaf of the lateral and at 3 inches from the rod, and nearly every axil contains a bunch. The joints of the laterals are so short—only an inch or two apart—that the bunches even before they flower touch each other, and the house at the time of my visit presented nothing short of a remarkable exhibition. I consider these prolific Vines to be highly worthy of special remark; for rods in their second year after planting to show nearly a hundred bunches each prove what may be done by good cultivation—growing stout short-jointed canes and ripening their wood perfectly.

These Vines afford a striking example of the great value and importance of a complete maturation of the wood in the autumn, for it is to the special pains taken

in that respect that the extraordinary crop now showing is to be attributed. Of course I could not count them all, but I have no doubt that had I done so I should have found a thousand bunches showing in 1876 on twelve Vines which had been planted in June, 1874.

There can be no doubt that your correspondent was right when he stated that more Grapes would be obtained in the least time by the plan which he suggested than by any other that could have been adopted; and there can be no doubt but that Mr. Legg after freely thinning (which by the time this appears will have been done) will be able to cut more than twice the weight of Grapes that he would had he cut down all the Vines in the orthodox manner and allowed each to carry the limited number of bunches usual for the first year's fruiting.

These Vines, it should be remembered, were planted 2 feet apart with the object of bearing every alternate rod heavily and enabling the others—the permanent Vines—to attain strength by a light system of cropping during the first few years of their growth, eventually removing the nursing Vines altogether. Mr. Legg, however, had some doubt as to whether the decaying roots of the Vines removed would not engender fungus, and which might possibly spread to the roots of the permanent Vines: hence he has adopted the safe system of not pulling up the Vines, but cutting them down and training up young rods annually—one Vine bearing the crop this season and the next perfecting a fine cane for another year's crop. This is an old but a good system of Grape production, and by adopting it more fruit may be obtained in a less time than by the popular spur system of pruning. That the plan has so far answered exceedingly well, the extraordinary show of bunches at Cleveland House demonstrates.

I mention the matter now because it is the time to train-up young rods from old Vines; and where old Vines do not produce satisfactory crops on the spur system the training-up of new wood may effect a great improvement in the value of the crop succeeding.—G. W. Y.

VIOLETS.

I OBTAIN my best blooms from plants in very open exposed sites. I have before advocated partial shade, but I find I made a mistake. Of course I have more red spider, which Mr. Abbey (see page 292) makes no mention of. My remedy is to cut all the leaves off not quite close—about 2 inches, or not quite so much—from the surface, and immediately give a good dressing of soot; this not only destroys the red spider, but acts as a stimulant. It will only require once doing in the season; about the end of July is the best time. And till last season I planted, and advocated planting, "four rows in 4-foot beds," but I find 4-foot beds made to run east and west or as near as possible, and planted across are much better, especially if you give protection in severe weather, and so planted you can not only place some temporary screen on the north side, but the rows have the full benefit of the sun at all times in the winter or early spring months.

I cannot quite understand why such an excellent cultivator of Violets as Mr. Abbey does not practise "layering" runners instead of running the risk of raising plants in other ways. Of course it is a little troublesome, but the superior plants you obtain, and the quantity, well repays the extra labour. I did not have so many layered last season, but the previous season my men layered about seventy thousand. The runners require to be pegged down and slightly covered with soil. For pegs they use the trimmings of pea sticks for the early runners, and fern (the common Bracken) as soon as firm enough for use. And although Victoria Regina could be covered with a dinner plate in December, 1871, yet by October, 1873, I had about thirty thousand plants, and could, if I had given those planted in the previous March sufficient room, have had a hundred thousand plants. The rooted runners should be taken off from the parent plant and layered-in as soon as ready, and they soon become well furnished with a thick mass of roots, and will move anywhere at your convenience. If they have been layed-in a long time, and you are not ready for the plants to be put in their permanent quarters, especially if they are beginning to grow freely, take them up and relay them; the slight check will greatly improve them. I am persuaded you will find that plants from layered runners are far preferable to any others.

I for one feel greatly indebted to Mr. Abbey for his details of the frame or pit culture of Violets, and I am sure those farther north must feel under far greater obligation to him. The most simple mode is often a long time in being arrived at, perhaps because it is so simple. My outdoor Violets were a grand sight this season. Victoria Regina was one sheet of purple. I measured a space just to count the fully expanded blooms, and in a square foot I counted 120, nine-tenths erect and far above the leaves, and every one above 1 inch in diameter—mostly $1\frac{1}{2}$ inch.

There is quite a diversity of expression about the colours of Victoria Regina and Prince Consort. They must be seen growing in quantity to speak very decidedly about them; and then Victoria Regina has a most apparent red hue, but Prince Consort a most marked blue appearance. I consider the Victoria Regina purple in colour, and Prince Consort blue in colour, both much deeper at first opening, but both retaining their respective shades to the last. The Victoria Regina from the very deepest purple at first opening till it fades away (after a week in warm weather to three weeks in cold weather) into a very pale purple; whereas Prince Consort is of the deepest blue at first till it fades into the palest blue.—GEOFFREY LEE, *Clevedon*.

FLAVOUR OF VEGETABLES.

WITH all deference to "CLERICUS," and without expressing an opinion as to the merits of the Pea named by him, I maintain that no gentleman is competent to judge of the quality of a vegetable unless he, or someone equally interested, will personally superintend the cooking of it. There are so many ways of spoiling vegetables between the garden and the gentleman's table, without doing it wilfully, that it is a hundred chances to one if the gentleman ever tastes them with all their natural good qualities, as the gardener does at his own humble board.

For making bad stale vegetables palatable the professional cook is worthy of all praise. If they are hard and tough he softens them and makes them tender; if they are yellow or brown when they should be green or white, he changes them to the desired colour, and even if they are tasteless he imparts a flavour to them; but, unfortunately, he trusts so much to his own skill in this direction, that he does not trouble much about using them in their own native freshness. The gentleman, perhaps happily for himself, knows nothing about these things. Green Peas to him are Green Peas, and nothing more; he is never allowed to taste them in their natural purity. He is, perhaps, a little more particular about the looks of a thing than about its other qualities, and he gives way to the cook's whims, prejudices, and old-fashioned notions about certain vegetables with certain meats, many of which are notoriously wrong.

If you would taste the full delicious flavour of Marrowfat Peas, you certainly must not have them served with duck which has highly-seasoned stuffing, nor with lamb and mint sauce—no, nor yet have the smallest particle of mint boiled with them, dear and time-honoured as the custom is. If you grow the old-fashioned bullet-shaped Peas under either their old or their new names, use mint with them by all means, for

they have no particular good flavour of their own; but with the best Marrow Peas it is different. It would be nearly as pardonable to boil onions with them as mint, for in either case the flavour would be spoiled. I have often been amazed at the praise lavished on vegetables, and especially Peas of second-rate quality, by men whose taste and judgment in everything else horticultural is almost unquestionable, till I thought of the mint, soda, &c., and then it became intelligible.

I once knew a cook of great repute who would not have Veitch's Perfection Peas three parts grown (they were too large for him), if he could get some inferior round kind about the size of Canna seed. Size was the first consideration, flavour and colour he could give in his own way. I have no objection to people having Peas with their lamb or duck, but I do object to their pronouncing judgment on the quality of the Peas under such conditions.

To be judged correctly Peas should be gathered as nearly as possible of one age; personally I prefer them nearly fully grown. They should be used as soon as possible after gathering, and on no account must they remain in bulk long. They must have a large quantity of water, which must boil before the Peas are placed in it, and the fire must be sufficiently brisk to keep it boiling with the lid entirely off the saucepan. Nothing should be added to the water but a pinch of salt. I am very sensitive to the least bit of soda; it seems to have a depressing effect. This may be partly imaginary, but I do not think it is, and I rarely venture to taste green vegetables out of my own house.—WM. TAYLOR.

SUBTROPICAL BEDDING.—No. 1.

THE distinguishing marks of beauty in a plant that is used in subtropical bedding arrangements are its massive yet graceful form, and the shape, firmness, and also elegance of the leaf. Now, the way in which we often see ornamental-foliaged plants used, beauty and perfection appear of no consideration, the stately plants being so crowded together that their beauty is lost. Look for instance at a large bed of Solanums, Caladiums, Dracenas, Ferdinandias, Wigandias, or Ricinus. When they are closely planted a clump of shrubs would be quite as effective. Now, how are the grand qualities of this class of plants to be seen to the best advantage—the eye gratified and perfection attained? In the first place they must not be planted so closely as to touch each other, and at the end of the growing season they will be robust, graceful, and vigorous; air and light will play between the leaves and branches, and they will grow into shapes worthy of admiration instead of gaunt and meagre forms that cannot be recognised as attractive.

In the carrying-out of a well-arranged scheme of subtropical bedding it is essential to use plants of a compact habit and of bright colours, for it would be just as monotonous to gaze on a number of tall as it would be on a number of dwarf plants. Tall plants are necessary for the relief of the dwarf varieties, and the dwarf plants wonderfully increase the appearance of plants of nobler growth; so we must use them collectively, and adjust them so as to harmonise together.

The form of beds is of great importance in the arrangement of subtropical plants, for such plants we want in no formal or geometrical order, and we must therefore avoid points and angles and elaborate designs. The more irregular are the outlines of the beds the more natural will the plants look and form predominating features. Each bed may be varied in shape by turns and curves, but avoiding large broad beds, rather keeping to long and narrow forms, for they are greatly preferred for growing, also showing to advantage, plants which are subtropical in character and which look more natural than they would if planted in a choice design.

BED No. 1.

1. *Ficus elastica*.—This is a well-known favourite plant, and is generally appreciated for indoor decoration, as it will grow and thrive better in a living-room than any other plant with ornamental foliage. The leaves are so stout and leathery that the dry atmosphere and dust have but little effect upon the plant's health. But our purpose is to speak of it as a subtropical plant. The free growth and nobleness of character peculiar to its habit entitles it to be classed among the most useful decorative garden plants. Plants can be increased either by cuttings or by eyes. Cuttings will take root freely when the wood is firm—that is, in the autumn (September and October) when the plants have done growing, or early in spring before they begin to grow. At these times there is no difficulty in striking them. After the cuttings are taken off from the parent plant

and prepared by being cut close to a joint, dip the wounded part in silver sand to stop the bleeding, let them be laid out singly in a cool house for four days; by this time the wounded part will become dry. If inserted in a hotbed, or even taken into a warm house at once, the cuttings will probably rot at

the base. Propagation from eyes is much the same as that adopted in raising Vines—cutting up the stem into lengths about 1½ inch in length on each side of the bud, and afterwards drying them, then insert singly in small pots, using light fibry loam with plenty of silver sand; a pinch of dry sand placed in

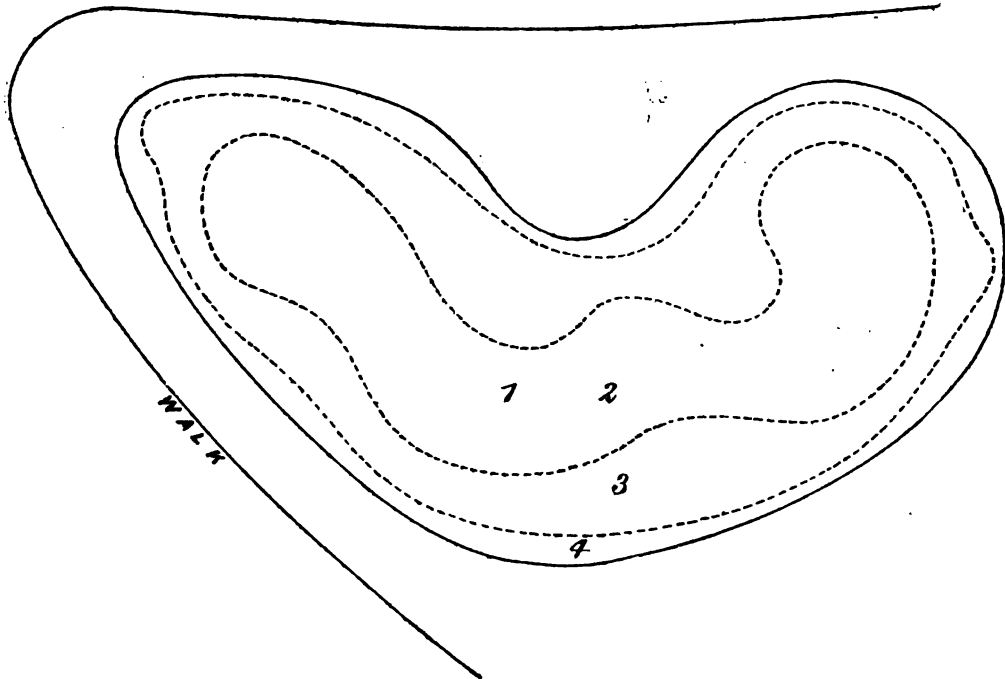


Fig. 88.—BED No. 1.

the hole with the cutting or eye will act as a styptic until the wounds are healed and roots emitted.

2. *Coleus Baroness Rothschild*.—Dark crimson leaves with a yellow margin. A strong grower. Strike cuttings in March and

April. Pot them on, keeping them close to the glass; stop them when necessary to keep them bushy. The above to be used as a carpet for the Ficus.

3. *Sedum carneum variegatum*.—This pretty *Sedum* makes

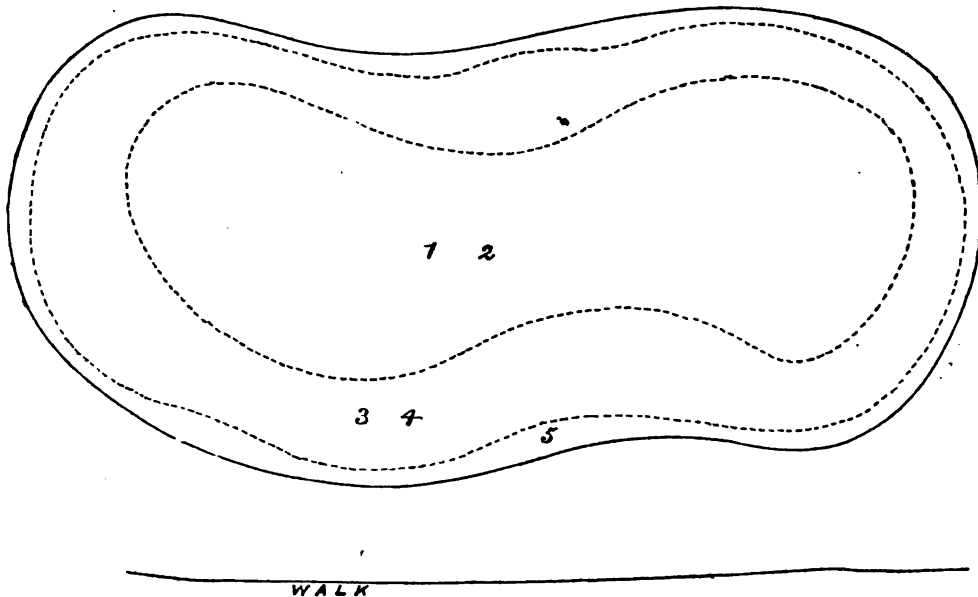


Fig. 94.—BED No. 2.

a very desirable little carpet plant. It is propagated in spring, when every little bit will strike freely in warmth, making fine plants for use in June and July.

4. *Sempervivum californicum*.—This is a close, neat, com-

pact plant, with dark green leaves tipped with chocolate. It is propagated by offsets, which it makes freely. It is quite hardy.

BED No. 2.

Eucalyptus globulus.—This is a quick-growing plant, of

upright habit and distinct aspect. The branches when young are of a square form, and have a winged or feathered appearance, and they as well as the young leaves are of a peculiar bluish white colour. Seeds sown in the autumn produce the best plants for the summer bedding.

2. *Clematis Jackmanii*.—If the growths of this beautiful hardy climber are trained over some twigs or sticks just above the ground a splendid carpet is produced for the Eucalyptus.

3. *Fuchsia Sunray*.—The leaves of this variety are richly marked with bright crimson, white, and green. It has been much admired in Hyde Park, where it was used as a third row, and formed a very attractive feature among other decorative plants. Cuttings struck in March will make good plants for bedding purposes.

4. *Tussilago Farfara variegata*.—A variegated form of the common Coltsfoot. Its large flat leaves when full grown are over a foot in width. It is a most effective plant for edging purposes, especially for large beds and for distant effect. It is quite hardy, and the smallest bit of root will make a plant. Plants of this *Tussilago* to be mixed with the *Fuchsia*.

5. *Thymus citriodorus aureus marginatus*.—The gold-and-green foliage of this plant is quite charming, particularly in the spring; but if planted in too rich a soil the foliage is apt to lose its golden shade. Plants are easily propagated by cuttings, which will root at any time through the year in a cold frame, or under a hand-glass in summer.—N. COLM.

NATIONAL AURICULA SHOW,

MANCHESTER, APRIL 25TH.

I HAVE been a grower of Auriculas for forty years. During that time I have of necessity heard much of the Manchester growers, but until now have never been present at one of their exhibitions, and it was consequently with some degree of expectation that I "assisted" at their spring show this year.

I know indeed that the season must have been a trying one; the Show had been fixed at a somewhat earlier period than usual, and the season was a somewhat later one, and hence it was not unlikely that the Show would not in point of numbers be equal to the average; nor was I far out. Some growers were not represented, while others complained that their flowers were not in. Still to one like myself, who has been accustomed for so many years to the illipit displays of Auriculas we can make in the south, and the *laissez faire* sort of way in which we go about it, it was indeed a pleasure to see the goodly display of one's favourites and to mark the enthusiasm of the growers, also to meet men so well known as Horner, Simonite, Pohlman, Lord, Levick, Wilson, Cheatham, Woodhead, Gordon, and others. But I must now notice the Exhibition.

For single green edge the premier prize was awarded to the Rev. F. D. Horner for Lancashire Hero, with a truss as clear a green as it is generally with us a grey; first prize going to Mr. H. Wilson with Colonel Taylor—both of these flowers with three pips; second to Rev. F. D. Horner with Traill's Anna; third Mr. W. Wardle with Imperator, a starry flower, definite in body colour; fourth Rev. F. D. Horner with Prince of Wales; fifth Mr. B. Simonite with Talisman, a fine bold seedling, with somewhat scollopy paste; sixth Mr. Elliott with Peveril of the Peak (Walker); and seventh Rev. F. D. Horner with Prince of Greens (Traill's), in the style of Colonel Taylor.

In the next class for six dissimilar blooms the Rev. F. D. Horner was first with Lancashire Hero, Heap's Smiling Beauty, a fine specimen of a lovely flower; Hay's Topsy, a beautiful self, with round solid paste; Booth's Freedom, a good specimen of a grand old flower; Traill's Anna (green), a little rough; and Syke's Complete, a refined flower. The second prize was awarded to Mr. Wilson of Halifax with Prince of Greens, Smiling Beauty, Pohlman's Garibaldi, Colonel Taylor (very vigorous), George Lightbody (a splendid flower), and Ashworth's Regular (good white). Third was awarded to Mr. Thomas Woodhead for Smiling Beauty (cupped), Syke's Complete, Martin's Mrs. Sturrock; Oscar, seedling of Mr. John Read of Market Rasen, a most promising flower; Gains' Lady Richardson, better than ever I have seen it. Fourth to Mr. B. Simonite with Imperator, a seedling; Frank Simonite; Bessy Bell, self, paste thin and blankety; Talisman, and Conqueror of Europe.

Amongst the single grey edges the premier prize was awarded to Mr. B. Simonite for a seedling in the style of George Lightbody, a fine bold flower, and to be called after that first-rate florist Samuel Barlow. First to Mr. Mellor with Kenyon's Ringleader; second Rev. F. D. Horner with George Lightbody; third Mr. Thomas Holden with Complete; fourth Rev. F. D. Horner with John Waterston; fifth Mr. J. Cooper with Grime's Privateer; sixth Mr. Barlow with Privateer; seventh Mr. Mellor with Smith's General Bolivar; eighth Rev. F. D. Horner with an enormous truss of Ne Plus Ultra.

In whites the premier prize went to Rev. F. D. Horner with Smiling Beauty, very lovely; first to Mr. Elliott with

Bright Venus; second to the same grower with Summersdale's Catharina; third to Mr. B. Simonite with Chapman's Maria; fourth to Mr. Wilson with Ashworth's Regular; fifth to Mr. Dyson with Smith's Ne Plus Ultra; sixth to Rev. F. D. Horner with Ann Smith; seventh to Mr. Wilson with True Briton, somewhat rough; eighth to Mr. Simonite with John Simonite, a refined white.

In Selfs, which are very numerous, the premier prize was awarded to the Rev. F. D. Horner for Turner's Charles Perry, shown in good style. First to the same exhibitor for Netherwood's Othello, second to the same for Charles Perry, third to Mr. Wilson of Halifax for Martin's Mrs. Sturrock, fourth to Mr. S. Cooper for Meteor Flag, fifth to Rev. F. D. Horner for Pisarro, and sixth to the same exhibitor for William Lightbody, a fine seedling of the late George Lightbody, in the style of Lord Clyde, but smooth; seventh to Mr. S. Cooper for Mrs. Smith, and eighth to Rev. F. D. Horner for Lord Lorne, a peculiar crimson flower, but flimsy, and requires to be shown very young. Its colour will always make it attractive.

In Class B for four dissimilar varieties the first prize was awarded to B. Simonite, Sheffield, with Admiral Napier, a fine green edge with splendid body colour; Traill's Beauty, bold white edge; Lightbody's Robert Traill, and Martin's Mrs. Sturrock. The second prize was awarded to Mr. H. Wilson for Litton's Imperator, George Lightbody, a very grand specimen; Heap's Smiling Beauty, and Lightbody's Meteor Flag; Mr. Thomas Woodhead being placed third with Imperator, Mrs. Sturrock, Chapman's Maria with its lovely body colour, and Smiling Beauty. The Rev. F. D. Horner is fourth with Traill's Anna, George Lightbody, Smiling Beauty, and Mrs. Sturrock.

In Class C, for pairs, the Rev. F. D. Horner was first with Prince of Greens, a splendid flower of fine properties; and Heap's Smiling Beauty. Mr. Thomas Woodhead second with Litton's Imperator and Chapman's Maria. Mr. H. Wilson third with Leigh's Col. Taylor, most vigorous, but deficient in paste. Mr. Thomas Mellor fourth with Conqueror of Europe and Turner's Charles Perry. Most of these flowers were exhibited in very fine condition, although a few of them gave evidence of the cold winter and spring to which they have been subjected.

For the best Lancashire Hero the extra prize was awarded to the Rev. F. D. Horner for the best green edge in the Exhibition; one to the same gentlemen for Booth's Freedom; and for the best grey to Mr. H. Wilson for George Lightbody. These extra prizes were given by two members of the Society.

In Alpines the first prize for four dissimilar varieties was awarded to Mr. H. Steward of York for Conspicua and three seedlings; second to Mr. R. Gorton for Queen Victoria, Diadem, Miss Rich, and Beatrice; third to Mr. S. Cooper for Dazzle, Neatness, Prior, and Diadem; fourth to Mr. Thomas Holden with Duchess of Cambridge, Unknown, and two seedlings. In the premier classes for Alpines with yellow centres the premier prize was awarded to Mr. S. Cooper with Ovid; first to Mr. Elliott with Unknown, second to Mr. S. Barton with Dazzle, third to Mr. R. Gorton with Diana, fourth to the same exhibitor with Diadem, fifth Mr. Mellor with Unknown, sixth Mr. Cooper with Edgar, seventh to the same grower with Prior, and eighth to Mr. R. Gorton with Brilliant.

In white-ground varieties the premier prize was awarded to Mr. R. Gorton with Mauve Queen; first to the same exhibitor with Purple Emperor, second to Mr. S. Cooper with Brilliant, third Mr. R. Gorton with a seedling, fourth Mr. S. Cooper with Diadem, fifth Mr. T. Holden with Unknown, sixth Mr. H. Steward with Unknown, seventh Mr. T. Holden with Unknown, and eighth Mr. R. Gorton with Purple Queen. Altogether, however, it was my impression that Alpines were not equal in quality to the Auriculas, and that those we are in the habit of seeing in the south are quite able to hold their own with those exhibited at Manchester, and I cannot but think the judging was defective.

In Polyanthus the first was awarded to Dyson with Exile and George IV., and second to Mr. Mellor with same. Single plants. Premier to Mr. Dyson with Exile; first Mr. Dyson with the same, second Mr. Elliott with Lord Lincoln, third Mr. Elliott with Rev. F. D. Horner, fourth Mr. Dyson with Cheahire Favourite, fifth Mr. Elliott with George IV., sixth Mr. Holden with seedling, seventh Mr. Dyson with Stebb's President, and eighth Mr. Steward with a seedling. Although I have never been a grower of Polyanthus I have always admired their fresh colour and fine markings, and after the strange collections one sees brought forward in the south it was a pleasant sight to see them well shown.

It deserves to be noted that the standard by which the flowers are judged is much higher than what we are accustomed to; that no supports are permitted, and that most certainly they owe nothing to their setting-up or surroundings; they are not brought to the exhibition in pots, but simply wrapped round in moss and are then placed in empty pots provided for them. Of course it makes them much easier of transport, and they do not suffer from the treatment, as they are immediately repotted on their return from the Show. Their individual pips are ex-

examined, and the judgment goes not on the general appearance of the flower, but on the fact of their coming up to the correct standard.

Amongst other noticeable exhibits was a large pan of seedling yellow Auriculas raised by the Rev. F. D. Horner, plain and shaded, and (most singularly) raised by him from Charles Edward Brown crossed with George Lightbody, both grey-edged flowers. If this be the result of breeding for definite ends surely it is a strange end to arrive at. Messrs. G. & W. Yates exhibited some fine stove and greenhouse plants, bouquets, and herbaceous plants. Orchids were exhibited by Mr. Leech, Mr. Wrigley, and others. I have never seen such a plant of *Dendrobium Falconeri* as Mr. Leech's; and Mr. Charles Noble of Bagshot had a fine lot of his early-flowering *Clematis*, including Lord Napier, Miss Bateman, Lord Lonsborough, Lady Emma Talbot, Duke of Buccleuch, Albert Victor, and Mrs. Howard Vyse.

The whole Exhibition reflects great honour on the people of Manchester for the spirited manner in which it is carried out, and I could only wish that somewhat of the same might be found amongst lovers of horticulture in the south of England, but after watching patiently for some ten years I begin now to despair of any such results; and if I might take exception to anything it is to the way in which trusses are thinned out, so as to leave only three or four pips. It may conduce to the more critical judgment of varieties, but it does not to the appearance of the plants.

It was noticeable how the same variety in the hands of different growers was so different. No Smiling Beauty in the Show was equal to Mr. Horner's, and no Colonel Taylor to Mr. Wilson's. The vigour of this variety with him was something remarkable; and then the difference of blooming time does not seem to be so great between the north and the south as I had supposed. The same varieties were in flower here as I have in my own collection at home.

It only remains for me to add that nothing could be more kind and courteous than the reception I met with from all with whom I came in contact, and the Manchester good feeling was as usual abundantly shown. And I hope increasing prosperity may attend a Society which thus endeavours to foster a taste for a flower so well deserving of favour and so "loveable," as I heard it called the other day by an eminent Orchid grower, was the Auricula.—D., Deal.

ROYAL BOTANIC SOCIETY.

APRIL 26TH.

THE second spring Exhibition, which was held under the auspices of brilliant weather, occupied the entire length of the corridor and a portion of the conservatory. Ornamental groups of plants were exhibited by Mr. B. S. Williams, Holloway, Messrs. Cubbush & Son, Highgate, and gorgeous plants of *Clematises* by Messrs. G. Jackman & Son, Woking. Mr. Walker, Thame, exhibited three admirable boxes of cut Roses, the blooms being fresh, bright, and beautiful. Messrs. W. Paul & Son, Waltham Cross, exhibited three boxes of cut Roses, also cut trusses of Zonal Pelargoniums in forty-two varieties, all in excellent condition; and Mr. Pestridge, Brentford, twenty dozens of small plants, very bright, of Gold and Silver Tricolor and Bicolor Pelargoniums. Messrs. Paul & Son, the Old Nurseries, Obeslunt, submitted a plant with five blooms of their new dark Rose Duke of Connaught. The blooms were of extreme richness, of a fiery crimson colour suffused with purple; the petals possess great substance, and as crowning its merits this fine Rose is deliciously perfumed.

Mr. Helms, gardener to F. A. Philbrick, Esq., staged an admirable group of Orchids, comprising *Vandas*, *Dendrobies*, *Odontoglossums*, *Saccolabiums*, *Masdevallias*, *Cypripediums*, and *Phalanopsis grandiflora surca*, all remarkably well bloomed and cultivated. Mr. Ratty exhibited a standard Azalea Bijou de Paris, a dense mass of pure white and pink, and remarkably handsome. Mr. Clark, gardener to W. Shuter, Esq., Hampstead, exhibited large and well-grown *Caladiums*, and also twelve new Primroses and Polyanthus. In this collection a yellow Oxlip, *Empress of India*, was conspicuous by its fine trusses of yellow flowers; it is a most promising bedding variety. These collections with the plants in the classes made an effective display.

For twelve stove and greenhouse plants in 12-inch pots, Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, was placed first with an admirable collection; Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., being placed second, and Mr. Toms, gardener to H. Wettenthal, Esq., Seven Sisters Road, third. In the open class for six early-flowering stove plants in flower in 12-inch pots, Mr. Ward was again placed first for medium-sized plants. Amongst these the spathe of *Anthurium Scherzerianum* were of marvellous size, measuring fully 6 inches by 5. *Ixoras Williamsii* and *Prinos* of Orange, also *Clerodendron Balfourii*, were effective. Mr. Wheeler had the second place.

For nine Roses in pots (nurserymen), Mr. Turner, Royal Nurseries, Slough, was the only exhibitor, and staged healthy well-

bloomed specimens, the plants ranging from 2 to 4 feet in diameter, and the same in height. In this collection, which embraced popular varieties, the Tea Rose Mont Blanc was exceedingly effective. The first prize was awarded.

For six Azaleas in 12-inch pots (amateurs), Mr. Ratty, gardener to R. Thornton, Esq., The Hoe, Sydenham Hill, had the first place with densely bloomed dwarf standard plants with flat-traced heads 3 and 4 feet in diameter. Mr. James, gardener to W. F. Wilson, Esq., Redles, was second with healthy well-bloomed pyramids, *Duchesse Adelaide de Nassau* being very fine, and Mr. Toms third with small plants.

In the corresponding nurserymen's class Mr. Turner was placed first for large well-flowered specimens; Charming, deep pink, and Marie Varvase, white, being the most noteworthy varieties. Messrs. W. Cubbush & Son being second with small healthy standard plants, A. Borsig being especially attractive.

For twelve hardy herbaceous plants, Mr. Roberts, gardener to W. Terry, Esq., Fulham, was placed first for large and good plants including a fine example of *Symphphytum obovatum*, *Trillium grandiflorum* (fine), *Aubrietia purpurea*, *Alyssum saxatile*, *Trileta uniflora*, *Primula cortusoides amona*, and *Scillas*. Mr. Elliott, gardener to L. Clark, Esq., Sydenham Hill, being second for small fresh plants, *Caliba palustris minor* fl.-pl. being very fine; *Anemones trifolia*, *memorosa*, and *memorosa bracteata* fl.-pl., which were very charming; *Epimedium niveum*, *Primulas*, and *Gentiana exiosa*. In the class for six old-fashioned hardy plants in flower Mr. Roberts exhibited a very creditable collection embracing *Narcissus poeticus* (aurantiacus), a very charming *Narcissus*, *Daphne cneorum* (1752), *Alyssum saxatile* (1710), *Arabis albidia* (1798), *Pulmonaria virginiana* (1799), and *Trollius asiaticus* (1759), the figures representing the years of their introduction. The first prize was awarded.

For six *Delytras* (nurserymen), Messrs. James Carter & Co. were the only exhibitors. They staged excellent plants 2½ feet high and through, and worthily had the first prize. In the corresponding amateurs' class Mr. Wheeler had the stage to himself, and had a third prize awarded.

For nine *Cinerarias* Mr. James was the only exhibitor. He staged plants in his usual excellent style, the plants being about a foot in height and 2 feet in diameter. The first prize was awarded. For tree Mignonette, Messrs. J. Carter & Co. staged splendid specimens—such examples of culture as is rarely seen, the varieties being "New White," fine spikes; *Crimson Giant*; "Hybrid" Tree, very superior; and Tall Pyramidal. These were perfect pyramids, 5 to 6 feet high, and 3 to 4 feet in diameter at the base. For six pots of Mignonette the same exhibitors staged very good pyramids, the best being the "New Dwarf Compact" and Pyramidal Bouquet. First prizes were worthily awarded these plants.

In the class for six Heaths Mr. Ward and Mr. Wheeler were placed in the order named. Mr. Ward's were medium-sized well-bloomed specimens; Mr. Wheeler's being small plants.

For twelve Auriculas Mr. Turner had the first place for a collection of uniform excellence, comprising Prince of Greens (Traill), George Lightbody (Headly), Lord Olyde (Lightbody), Col. Champneys (Turner), very fine; Mr. Sturrock (Martin), Omega (Turner), General Neill (Hill), Arabella (Headly), Topsy (Keynes), John Waterston (Cunningham), and Charles Perry (Turner); Mr. James, gardener to W. F. Watson, Esq., being placed second, and Mr. Elliot third. Mr. Turner exhibited three new varieties—Mrs. Purves (Turner), grey edge, very refined; James Douglas (Turner), green edge, a fine massive flower, worthy of its name; and Star of Bethlehem, green edge, a bright and bold flower.

Floral certificates were awarded to Mr. Turner for Auricula Mrs. Purves, to Messrs. Paul & Son, Cheshunt, for Rose Duke of Connaught, and to Mr. B. S. Williams for Ferns *Hypolepis Bergiana* and *Niphobolus heteractis*. Silver medals were awarded to Messrs. Geo. Jackman & Sons, Messrs. Wm. Paul and Son, and Mr. Walker; and bronze medals to Mr. Pestridge, Mr. Clark (Caladiums), Mr. Clark (Primroses), to Mr. B. S. Williams and Messrs. Cubbush & Sons for plants, and one also to the last-named firm for cut blooms of Camellias.

TWO-DAY ROSE SHOWS.

I ENDORSE every word on this subject written by "T. H. G.," page 801.

I acted as censor three times at Kensington with Mr. Hole and Mr. W. Wood, two most painstaking and admirable judges, and once (I believe in 1861) with Mr. Parsons and Mr. Bunny, of whom little less could be said. The Roses were sadly decayed before the days were over. Some were falling to pieces, and others revealed a shilling centre; of course, the next day they would have been worse. In due time I will try and answer the question, Which is the best stock for Roses, or should they be on their own roots? The question, unless explained, is like the mouths of the Danube, "lost in mazes." There is often as much to be gained by ignorance as intelli-

gence, because the former calls forth intelligence which other, wise might be hid.—W. F. RADCLIFFE, *Okeford Fitzpaine*.

LET me as a judge back up "T. H. G." as an exhibitor with regard to two-day Rose shows. If there are to be two-day shows let them be for pot Roses only, and another set of prizes be offered for cut Roses the second day; but it is a perfect farce to lead the British public to think that a box of Roses shown fit for the judges on ten o'clock on Wednesday is worth looking at after one o'clock on Thursday. I have often noticed, on a hot morning in a stuffy tent, that Roses that I had admired and next door to worshipped when I had to judge them at eleven were mere shadows of their former selves by two o'clock; and many a time have I heard the verdict of the British public adverse to the opinion of the judges when they came to look at the Roses some three or four hours after, simply because the hot tent had been too much for those Roses which had had to endure close confinement in boxes, to say nothing of being tossed about in railways and cabs all the previous night, while perhaps some Roses from a new and neighbouring nursery gathered only that morning were still able to endure the heat, and perhaps in some cases, where gathered too small, had even improved. I think, therefore, exhibitors would do well to set their faces against the expense and trouble attending these two-day shows, and only agree to exhibit on condition of fresh prizes being offered the second day for new blooms, and permission given to remove the old at five or six o'clock on the first day.—C. P. PEACH.

NOTES AND GLEANINGS.

At the General Meeting of the Royal Horticultural Society, held on 19th inst., the following candidates were duly ELECTED FELLOWS: Major-General S. A. Abbott, James Campbell, Miss Corry, Horace Davey, Q.C., Colonel H. Holden, Walter J. Marshall, H. K. Mayor, S. Vaughan Morgan, Miss Reynett, Mrs. T. W. Stephens, Arthur Walter.

Mrs. GILLUM of the Red House, East Moulsey, has a MARSHAL NIEL ROSE, planted in the pit of a small conservatory, from which she has this season, since the end of February, cut 336 large blooms. The foliage also is very rich and luxuriant.

If gardeners cultivated VIOLETS more extensively they would very much contribute to the enjoyment of their employers. They may be had in quantity for more than seven months with the attention which Mr. Abbey gives them. We know Mr. Lee had a few good blooms as early as July, and abundance even in the present month.

We have lately seen in the nursery of Messrs. Jackson and Sons, at Kingston-on-Thames, a number of plants of *DAPHNE CNEORUM* grown in pots, and the plants forced into flower for room and conservatory decoration. The plants are in admirable health, perfect masses of glowing pink, and deliciously fragrant. The "Garland Flower" is one of the hardiest and sweetest of spring flowers for garden decoration, and its adaptability for forcing purposes renders it still more worthy of extensive culture. Messrs. Jackson's plants are established in 5 and 6-inch pots. They had been potted in the autumn and plunged outdoors in ashes. As soon as their buds were formed the plants were introduced into gentle heat, and are now attractive by their colour and enjoyable by their perfume. Than this dwarf *Daphne* few close-growing plants are more effective in spring. Plants are increased by layers, and flourish in peat or light loamy soils.

MANY fine Orchids are now flowering in Lord Londesborough's celebrated collection at Norbiton, and especially striking is a row of *CATTLEYA CITRINA* on blocks suspended from the roof. This Orchid is figured in the "Botanical Magazine" for 1840, and is there described as "a very fine and singular *Cattleya* sent by Robert Smith, Esq., of Oaxaca, Mexico, in 1838, to the collection at Woburn Abbey, where it blossomed in April, 1839. The bulbs and foliage are remarkable for their very glaucous or sea-green hue; and the fine flower, when seen in such a manner that the labellum is not brought into view, has at first sight so very much the appearance, not only in regard to form, but to size and colour, of the wild Tulip of our country (*Tulipa sylvestris*) that we were for a moment deceived by it. These flowers are scentless. The plant is of easy growth, and is undoubtedly a most valuable addition to our ornamental stove plants." Since the above description was written improved forms of this distinct *Cattleya* have been introduced, and so far from being "scentless," the

flowers at Norbiton fill the house with odour. One variety there is superior to any we have seen by the size and intense golden yellow of the flowers, of which half a dozen are depending from the same block. Altogether about thirty blooms are expanded, and the effect produced is both novel and beautiful.

At the usual fortnightly meeting of the HORTICULTURAL CLUB at their house, 4, Adelphi Terrace, Mr. Maurice Young of Milford Nursery, Godalming, submitted some specimens of a new process of printing on wood, invented and patented by Mr. Whitburn of Guildford. They were exceedingly chaste in design, and as they are printed by a common printing press the process promises to make an inexpensive ornament of chaste design suitable for the houses of ordinary citizens. An interesting discussion on the best trees suitable for planting in towns was originated by Mr. Leo Grindon of Manchester, and much valuable information was elicited. A vote of thanks was proposed to Mr. Young for his courtesy in bringing the specimens to the meeting.

THE beds of TULIPS in the gardens of the Inner Temple present an exceedingly gay appearance this year. They are now at their best, and, weather permitting, will be attractive until June. Mr. Newton has not dabbled in a large number of varieties or attempted to plant in fantastic designs, but has confined himself to the employment of a few sorts which are known to be reliable and effective. About five thousand bulbs were planted, the bed on the north side of the terrace walk being wholly planted with *Rex rubrum*, and the principal beds on grass on the south side of the walk being planted with *Keyzers Kroon*, very fine, edged with *Vermillion Brilliant* and *Cottage Maid*, the large oblong beds being entirely filled with the double *Tournefort*. These oblongs contain upwards of eighty rows each, of eight plants in a row. Scarcely a plant is missing, and all the blooms are of uniform height and excellence. The Hyacinths in the vases have also been very good, but they did not enjoy favourable weather, and their beauty was of short duration. The gay masses of colour which the Tulip beds now present command the admiration of many visitors. The bulbs were supplied by Messrs. James Veitch & Sons.

CUCUMBER TENDER and TRUE is admitted to be one of the best varieties in cultivation, being alike superior in size, quality, and appearance. It is, however, considered by many to be rather a delicate grower, and also shy in producing fruits. Really the variety is a free grower and bearer, and the latest instance we have had testifying to these qualities was afforded by a visit to the gardens of MUNSTER HOUSE, FULHAM, where in a house in which all the popular sorts are growing luxuriantly Tender and True is the most vigorous plant of all, and the earliest in swelling-off its fruits, which are produced at every joint. Telegraph is the next in point of vigour and earliness, all the others being several days behind these two excellent varieties.

A BOTANIC GARDEN about twenty acres in extent has been just opened at SOUTHPORT. In connection with it a museum has been erected containing collections in the various branches of natural history, the entomology of the neighbourhood being well represented in this branch of the museum. Geology has a department assigned to it, and the usual local curiosities, with coins, medals, &c., have a place. The whole of the collections have been well arranged and classified.

It is proposed to erect an AQUARIUM AND WINTER GARDEN at CLIFTON, and a Committee has been appointed with a view of obtaining a proper site.

ROSES ON THEIR OWN ROOTS.

I SEE at page 283 "A. B. C." fully bears out my statement of Roses on their own roots. He recommends putting the cuttings in during October. This is the old practice of striking, but if the cuttings are inserted during June I consider there is a season gained, as these make bushy plants the first year.

I find Roses worked on the Manetti make very good plants in about two or three years, and by the end of that time they are really on their own roots, as the Manetti is budded close to the ground. I find the Rose cuttings strike their roots into the earth, and when they have made roots enough to support themselves they have done with the Manetti, which very often dies off. I do not know if this is the case with Mr. Camm's Roses, I have repeatedly found it the case here.—J. POYALL.

CARNATIONS AND PICOTEES.—I find that a sentence in my notes on Carnations and Picotees has given offence to Mr.

Dodwell. The words may bear a stronger meaning than I intended, and I therefore beg to retract them, and to say I never intended to impute, as he seems to think I did, either coarseness or personal ill-feeling to him.—D., *Deat.*

THE OXALIS.

THIS is a large genus of plants of free-flowering properties. Most of the species, which are numerous, are of dwarf habit, and are worthy of culture alike by their pleasing foliage, close growth, and attractive flowers. The plants are of easy culture, the greater number of them being natives of the Cape of Good Hope, and consequently they require cool greenhouse or frame treatment. The species figured which is typical of the genus, has yellow flowers, which are drooping and produced in umbels borne well above the bright green Clover-like foliage. It requires protection during the winter. Other species have rose, purple, and white flowers.

A very attractive kind is *O. floribunda rosea*, which is one of the finest of border, rockery, or pot plants. It is a tuberous-rooted species, forming dense floriferous cushions 6 inches in height and a foot in diameter, the plants continuing in bloom from June to September. Its white variety, *alba*, is a charming companion plant, and both should be grown for rockery decoration. *O. Deppel* is a reddish-flowering Mexican species, and is attractive as a greenhouse plant. The roots of this species have been employed as a vegetable, the roots being boiled in gravy and served with brown sauce. *O. rosea* and *O. Valdiviana* are raised from seeds, the plants flowering in a few weeks after the seed is sown, and they are charming as pot or border plants. *O. tropaeoloides* is also raised from seed, and is employed as a carpet plant for flower beds, its dark foliage being very distinct. It is not necessary, however, to enumerate, for all the species are pretty without being gaudy, and grow freely in ordinary garden soil.

A few are hardy, and amongst them the Wood Sorrel or Shamrock, *O. acetosella*, which is a native of the moist shady woods of this country, Europe, and North America, and is one of the most elegant of wild flowers. It delights in retired shady woods, groves, and hedges, and flowers in April and May. It was called by the old herbalists Alleluja and Cuckoo's Meat, because as Gerard says, "When it springeth forth, the cuckoo singeth most; at which time also Alleluja was wont to be sung in our churches." But Alleluja is merely a corruption of the Calabrian name Juliola. The whole plant has a grateful acid taste, much more so than the common Sorrel, and is on that account used in salads and in sauces. In Lapland it

is so plentiful, that Linnæus says the inhabitants of that country take scarcely any other vegetable food than Sorrel and Angelica.

NOTES ON AURICULAS.

ORCHIDS and Roses can be seen at almost any time and at various shows, but an Auricula exhibition is seen but once or twice a-year; and to the old florists who do not now cultivate the flower it is a source of great delight to see the same flowers that were popular in their boyhood, and perhaps lovingly tended by their own hands. I had a visit of an old florist to see the collection at Loxford Hall this year, and how pleased he was to see some of the old flowers that he had not seen, it may be, for very nearly fifty years!

I have before me an old gardening periodical containing the names of the flowers that obtained the greatest number of prizes during the year 1834. At the head of the list in green-edged flowers is Col. Taylor (Lee's, not Leigh's as it is spelt in lists now): the same flower was shown at the Royal Aquarium still holding its own as the best green-edge. Freedom (Booth) stands next to it, but this is a weak grower, seldom showing more than three pipes. Alexander (Stretch) is third, followed by Highland Laddie (Pollit), Jolly Tar (Buckley), and Jubilee (Moore). Next in order is the grey-edged flowers; and here the modern-raised varieties are very considerably in advance, although the sorts named are still grown and valued. Heading the list is Privateer (Grime), followed by Ploughboy (Taylor), Ring-leader (Kenyon), Conqueror of Europe (Waterhouse), Revenge (Thompson). In white-edged flowers the one highest on the list was also in the winning twelve at the Show this year—Glory (Taylor). I have now ten healthy young plants of this propagated by cutting down a small plant last year. A celebrated florist told me that the plant could not be true as it increased so fast; but it is true, as it has just flowered, although no Auricula fancier could mistake the leaf of Glory, independent of the flower. Next to it in 1834, and only one mark behind, is Pillar of Beauty (Hugh), Bright Venus (Lee), Rule All (Ashworth), Regulator (Pott), Favourite (Taylor). In self the best of forty years ago was Flora's Flag, Metropolitan (Redmain), Ned Lord (Schole), Lord Lee (Berry), Lord Primrose and Apollo. The raisers' names are not given of the first and two last flowers.

I carefully examined the different collections at the Aquarium and took the names of the best flowers in each class, although from the early date of the Show some of the best sorts were not represented at all. In green edges Alderman Wisbey



Fig. 95.—OXALIS CORNICULATA.

(Headly) was finer than usual. Lovely Ann (Oliver), Colonel Taylor (Lee), Admiral Napier (Campbell), Peter Campbell (Cunningham), and General Neil (Trail) were in good order. The best greys were Alderman Charles Brown (Headly), Col. Champneys (Turner), Miss Giddings (Read), Mary Ann (Fletcher), John Waterston (Cunningham), Robert Trail (Lightbody), George Lightbody (Headly), Lancashire Hero (Lancashire), Competitor (Turner), and Sir C. Napier (Lightbody). In whites Drake Lewis (Turner), Smiling Beauty (Heap), Ann Smith (Smith), Arabella (Headly), Oatherine (Summerscales). Selfs.—Apollo (Dickson), Eliza (Sim), Mrs. Sturrock (Martin), Charles J. Perry (Turner), Topsy (Kay), Petronella (Headly), Pizarro (Campbell), and Mrs. Smith (Smith).

Of Alpines some very finely formed flowers were exhibited, nearly all of them raised and sent out by Mr. Charles Turner of Slough. The best were Diamond, Bronze Queen, Philip Frost, Susie Matthews, Slough Rival, Selina, George Lightbody, Dear Hart, National, Trojan, Queen Victoria, Illuminator, Col. Scott, and Miss Reed.

The only difficulty with Auriculas is to obtain the good old sorts; but these, and even those sent out quite recently, cannot be obtained except by exchange. The culture of the plants is by no means difficult. They must be grown in frames near the glass, and air must be admitted as often as possible. The plants, whether in flower or not, must be shaded from scorching sun; and with plenty of water at the roots when the plants are in full growth success will be certain.—J. DOUGLAS.

NOTES FROM MY GARDEN IN 1875.

GLADIOLUS.

THE last, I may say, of one's collection of favourite flowers, and certainly not the least cherished, is this grand autumn flower; for although I grow *Chrysanthemums* I almost look upon them as commencing one's season rather than finishing it off, and they are grown by me for decoration more than as a florist's flower; so that when I have taken up and harvested my *Gladiolus* bulbs I look upon it that my gardening year is at an end, and one's ecclesiastical and gardening years synchronise very much, as the *Chrysanthemums* come in a little before Advent, the height of their season being about the 20th of November.

I have never been more satisfied with my growth of *Gladiolus* than I was last year; and I might well be, for at the Exhibitions at South Kensington, the Alexandra Palace, and the Crystal Palace I took first prize in all the classes in which I exhibited except once, and my flowers generally were of very fine quality. The reasons of this were, I think, threefold. In the first place I have considerably weeded my collection; and although small it contains, I imagine, the *crème de la crème* of the French sorts, each year giving us a few, at any rate, varieties which are worth preserving. Then in the second place I mulched my beds heavily and early, so that the roots were kept moist and received also the benefit of the manure washed down by the rain, of which we had in the early part of the season rather too much. It used to be thought—and I was of the same opinion myself—that heavy manuring was bad for them. Perhaps it is when mixed with the soil; but as on my visits to Langport I noticed how heavily Mr. Kelway manured the surface of his beds, I felt convinced that so successful a grower as he is would never have adopted the plan had it been injurious; and I thought that perhaps the grand finish of his flowers might in some degree be attributed to the liberal mulching they received. Then in the third place I diligently shaded my beds, erecting over them an awning for this purpose. I remember Mr. Standish used to insist that the *Gladiolus* would not stand it, but I think he was mistaken. Care must be taken as to the way in which it is done. Thus, for instance, if there is a tolerable prospect of a fine night I always draw up the awning in the evening and leave it up all night. If, again, the day is cloudy and yet not likely to rain I do not cover them, my object being to preserve them from the heavy rains which spot the flowers, especially the more delicate-coloured flowers, and from the sun, which burns some varieties and drives all more quickly out of bloom. As the awning is so arranged that I can walk under it, the flowers can be enjoyed much better than when having to stand out in the full blaze of the sun.

I tried last year a plan which my friend Mr. Banks told me of, and to which I have already alluded in the Journal—that of cutting the bulbs in two when they are a good size; and

found on lifting the corms in the autumn that quite as good new corms had been formed from those cut in halves as from those left whole. The advantage of this is obvious where the varieties are scarce, as it doubles the numbers. Of course care must be taken to feel the corm and see where the eyes are forming for the new corms, and cut the bulb so that each set may have an eye. It may be perhaps said, "But if you left the corm uncut you would have the same effect, for the two eyes would each throw up a shoot and each produce fresh corms." But this is by no means certain; for sometimes when one shoot starts strongly it seems to absorb all the strength of the corm, and the other remains dormant and finally perishes; whereas by cutting the corm you are assured of each growing. Besides, when the two shoots come up alongside of one another it is very difficult to keep them apart, and one injures the other.

I may here say that my object in putting up the awning was mainly the preservation of the corms in autumn, and that after the blooming was over it remained on altogether. Having never been able to account for the disease and its greater prevalence with us than in France, it struck me that it might be owing to the greater dryness of their autumns, and that if our bulbs could be kept from the drenching rains the same end might be gained. So far I am hopeful it has made a difference. I have never lost so few corms in the winter, for like Potatoes they may be taken up apparently sound, and yet before long begin to dry up and rot; but I can say nothing with regard to it until I see the result of this season.

Twelve new varieties were sent out by Messrs. Souillard and Brunet, the successors of Mons. Souchet, and of them I have found the following to be in my estimation first-rate varieties—*Geneva*.—A fine spike. Flowers full size, fine light cherry with red markings, each petal having a white line; throat yellow, with purple-carmine spots.

Grand Lilas.—Long spike of flowers of a distinct and new colour—lilas, with shadings of a deeper hue of the same colour.

Hercule.—A fine flower of the same type as *Virgile* and *Le Vesuve*. Extra large and very fine flower; colour a deep fiery red with orange shading. The individual flowers are very large, but I am doubtful as to the length of the spike whether a sufficient number of flowers will be open at one time.

Leda.—A very fine flower, white striped with lilac; large and full.

Pactole.—Without doubt the best yellow *Gladiolus* yet sent out. The spike is very long; the colour a pure yellow, sometimes without a bar or spot in it, at other times very prettily bordered with rose. In either condition it is a most attractive flower and is very robust in habit. The spike which I exhibited at the Alexandra Palace Show received a first-class certificate. Looking at its colour I regard it not only as the best yellow flower we have, but as the greatest acquisition of this year. Of the remaining eight the most promising were *Andromède*, *Giganteus*, and *Themis*.

It is with great regret that one is obliged to contemplate the disheartening fact that we shall have no show of this flower in the metropolis this season except a late one at the Crystal Palace, when the greater number of blooms in small collections will be past and gone. I have tried my utmost to secure a show, but have miserably failed and must now leave it.—D., Deal.

P.S.—In my short note on the diseased bulb of *Gladiolus* on page 269 the whole force of the note was destroyed by the omission of the little word "never." What it ought to have been was that it "never was planted in English soil."

CULTURE OF VEGETABLE MARROWS.

VEGETABLE MARROWS are generally produced by raising the plants in heat, potting them off and growing them in a frame for some time, and finally planting them on a gentle hotbed of manure and leaves which has been surfaced with good soil. That is a successful plan when carefully carried out, and is the best mode to adopt when Marrows are required early in the season. Frequently, however, the plan is not well carried out, and this may arise from no fault of the cultivator, for in the early spring his glass structures are often so much crowded that it is next to impossible to prevent many plants from becoming drawn. Those who have but limited glass accommodation will do well not to attempt raising plants from seed early in the season, or it is more than possible that they will defeat their object. Seeds of Vegetable Marrows sown in March, and the plants crowded under glass, will become weak and long instead of stout and strong, and will not give such

early produce as will plants which are raised from seeds sown a month later, and when the plants can be grown steadily with plenty of light and air and in a temperature such as is afforded by cold frames; but when Marrows are not specially required early a plan simpler than the above may be adopted with advantage.

Select a sheltered border and dig out a barrowful of soil, and put in its place the same quantity of rich decayed manure. Work this well up with some of the soil, and surface the enriched station with a few inches of leaf soil. On this place a hand-light, and in a week the sun will warm the soil. Early in May sow the seed, and when it germinates protect the young plants from slugs. The plants will grow rather slowly at first, but they will be very strong; and as the temperature increases that and the rich soil (warm water being given when necessary) will cause them to increase in size with extraordinary rapidity, and they will probably overtake the plants which have been raised in pots under glass. Plants raised from seed sown in these rich stations are much more fruitful than are plants raised under glass, and the former do not suffer from mildew nearly so much as the latter.

I have seen this simple plan adopted by cottagers with great success, and not being above taking a lesson from my humble neighbours, the result has been that from half a dozen stations thus prepared and protected by hand-lights I have had more Vegetable Marrows in the autumn than I have known what to do with. I advise others to try the same mode of culture, being convinced that in a few months they will readily acknowledge the value of the practice. I mean those who cannot raise their plants under glass without their becoming drawn and tender, and which receive subsequent and almost fatal checks to their onward growth and fruitfulness.—CLERICUS.

HYDRANGEA FLOWERS CHANGING COLOUR.

I CANNOT throw any light on the cause of the colour changing, and I once was in temporary disgrace through the lack of such knowledge. A lady employer saw me planting Hydrangeas in the shrubbery, and expressed a hope that they were of the pink kind, as she did not admire the slaty-coloured one. As her time was precious I cut the matter as short as possible by merely assuring her it was the pink sort I was planting. I had taken the precaution to prepare the places for the plants with some of the best turfy loam at my command, and hoped to make a pleasing feature in the grounds very quickly. Judge of my mortification when the flowers appeared, instead of being a beautiful lively pink—with the exception of a little one which had been planted in the natural soil without any preparation—they were all of an ugly slaty blue colour. Would the same soil which changes the colour of the common Primrose affect that of the Hydrangea?—W. T.

UNCOVERING VINE BORDERS.

MUCH has been written from time to time on covering Vine borders, and now, perhaps, a little may be seasonably said on uncovering them. It is easy to cover the borders either with shutters or dung without any mistake being made, but more easy to err in uncovering; and, in fact, considerable injury may be done to the Vines if the protective covering is removed from the borders suddenly and without due thought.

When fermenting material has been placed on the borders the utmost caution is needed in its removal. The warmth which by the manure has been imparted to the surface of the borders will, in all probability, have fostered the emission of active roots, and these roots will have turned their points in the direction of the heat and towards the surface of the border. Some of these roots may have permeated the manure, and in that case they must not be disturbed. But in connection with these surface roots it is more than probable that when one is visible ten other spongioles are invisible, their points being immediately below the surface. Now it is these invisible roots that are the most liable to injury. They are not seen, and hence are considered to be safe. But the active rootlets of Vines with their upturned points within an inch of the border's surface are not safe; they are liable to injury by drought, and also by sudden changes of temperature. To ensure safety the base of the fermenting material should not be removed. Probably the roots have been enjoying a temperature of 60°, and have also been very moist. To change this suddenly to a dry or rapidly drying surface is a dangerous practice.

Then as to temperature. In the day the sun will warm the

border, but what of the night? Frequently have I seen Vine borders which had been recently uncovered encrusted with frost, but never without being thankful that I was not responsible for the condition of the Vines so treated. More than once have I seen an unpleasant change take place in Vines, which was directly traceable to the incautious uncovering of the borders. It is at this period of the year that coverings are generally removed. The heat of the sun is tempting, and it is desirable that it should warm the ground, but we must not think so much of the heat in the day as to entirely forget the cold of the night. It is not much trouble, and it places the safety of the Vines beyond doubt, to have the surface of a recently-exposed Vine border only exposed for a time during the day, covering it at night. It is not the work of ten minutes to spread a few inches of long litter over a moderately-sized border on the afternoon of a warm day, and rake it off the next morning. A covering of mats where provided is neater and quicker. I know of no practice more worthy of adoption than that in the management of Vine borders from which fermenting material has recently been removed. In taking off covering of this nature my advice is, Do not take the manure off too closely, but leave on 2 or 3 inches, and do not remove it suddenly. A layer of soil over the residue of the covering will make all neat.

But there is another type of Vine-border covering—borders that have not been covered with warm manure to impart heat, but with cool rich manure to prevent cold and to afford nourishment to the roots. On these borders the excellent practice has been adopted of covering their surfaces in the autumn with 5 or 6 inches of rich manure. Now what about the uncovering of such borders? "Uncover them by all means," says one; "rake off the manure and allow the sun to warm the roots." "Let the covering alone," says another; "Vines are more often injured by a dry hot border surface in summer than by a cool moist border surface."

Now, something may be said in favour of both these views of the matter. There may be conditions, on the one hand of the character of the soil of the border, and on the other on the time at which the Vines are started into growth, which may render one or the other idea of special weight. For instance: Vines which are growing in a heavy and cold border, and which are expanding their foliage and approaching the blooming period, need, no doubt, all the solar heat that can be directed into the soil. In that case the former view may possibly be the most correct, but it cannot be carried out with the greatest efficiency without also protecting the border during cold nights. If the roots are deep and the soil heavy, then may the covering be advantageously removed and the surface of the border be opened with the fork to admit the heat; but on the other hand, if the roots of the Vines are not far below the surface, and if the soil is light and the border well drained, and the district is generally a dry one, the Vines also not being forced, then I should "think once, twice, and thrice" before removing the surface manure, and the end of my thinking would probably result in my leaving the manure on until the autumn, removing it then, also a little of the surface soil, and replacing with fresh soil and another rich covering. For light soil and dry districts this plan is a good one, and is the best for keeping the roots near the surface, and at the same time active by affording them a sufficiency of moisture and support.

The matter of uncovering Vine borders, and the summer treatment that is best to adopt to preserve the roots near the surface and keep the Vines healthy, is worthy of attention, and I for one should be glad to hear what other Grape-growers have to say on the subject.—A NORTHERN GARDENER.

WOODEN TRELLIS v. WIRE.

I WISH to draw attention to the inconvenience of the plan which is frequently adopted when placing wire on back walls of conservatories and other glass structures. Most builders dislike the plan of putting it up in sections, which all trellis-work under glass should be, for who is there that does not want to get at the back part in the course of a year or two if only to paint or whitewash it as the case may be?

With reference to the above I may say that I entered on a situation about two years ago, where the entire back walls of the conservatory were covered with a wooden trellis with *Cobaea scandens variegata* and *Passiflora cærulea* planted at the foot and trained over it. On these climbers there were thousands of mealy bugs, to destroy which I had to resort to washing the

woodwork with Gishurst compound, soap, &c., and then could not effectually eradicate the pest, simply because I could not get well at the back of the close trellis. The house was painted during the winter, and now the insects have made their appearance, except on a part to which we gave a thorough scalding with boiling water, with a little turpentine, sulphur, and tobacco water. I may add that the part we scalded had no border at the foot of the wall. Now, if these walls had been covered with galvanised wire instead of the heavy-looking wooden trellis it would have been better to paint, for no one knows the time it takes to clean and paint the wooden trellis but those who have the misfortune to have it, and then it is not done effectually without it comes off in sections and you can get at both sides. I pen these few lines to put persons on their guard, as the time is coming on for putting up new and renovating old houses; if they will use the wire it will be the cheapest, and I am sure if it is put up in sections the value of the plan will be proved some day.—H. S. J.

LINCOLN CODLIN APPLE.

A CORRESPONDENT wishes to know what the Lincoln Codlin Apple is, and asks for a description of it, because he cannot find it in the "Fruit Manual." If the author had described all the fruits in the Manual which have come under his observation, and of which he possesses figures and descriptions, that work would have assumed proportions which would qualify it for another title than a "Manual."

The Lincoln Codlin, sometimes called Lincoln Pippin, is a good-sized Apple 8 inches high and the same in width, of a conical shape, not unlike Nelson Codlin, with prominent ribs on the sides extending to the crown, where they form ridges round the eye. Skin of an uniform deep lemon colour, strewed with large russety specks. Eye closed, with erect connivent segments, and set in a deep angular basin. Stalk short and slender, inserted in a deep narrow cavity. Flesh white, tender, very juicy, with a mild acidity, and pleasant flavour. Stamens marginal. Calyx-tube very deep and wide, funnel-shaped. Cells open.

An excellent culinary Apple, which keeps in use till March.

RICHARD HEADLY.

AFTER years of painful suffering, a wreck of his former self, there has passed away from us at the age of eighty-one Richard Headly, almost the last of that band of florists who in a past generation made the south of England a fair and legitimate rival in florists' flowers of the north. And if nearly the last, certainly he was not the least; for while others gained their laurels by cultivation, he was not only successful in this respect, but also as a raiser of new varieties came well to the front in everything that he undertook. One cannot look down a catalogue of florists' flowers without encountering his name, and to the very last, therefore—his last serious illness—success attended his skill and intelligence, for amongst the newer varieties of Auriculas, Carnations, and Picotees, there are to be seen some of his raising.

It is now many years, when "George Lightbody" Auricula had just come out, that I made a pilgrimage to Stapleford, a thorough florists' home. He was then in the full swing of his culture, and was sweeping everything before him at the local exhibitions at Cambridge in all departments of gardening. Although only known to him as a member of the craft of horticulture, I was welcomed with that kindly hospitality he was ever ready to show, and could not but admire the energy with which he entered into his favourite hobby. He was principally known as a cultivator and raiser of Tulips, Carnations and Picotees, and Auriculas; of the Tulips he had a large collection, and all who visited him will remember his tale of the manner in which his Tulip beds were every year injured, as he believed maliciously, although many of his friends doubted this. As I am not a Tulip-grower I cannot recall the names of his seedlings. Sarah Headly I remember as a beautiful rose, and there were several others which he valued highly, but of their merits I have no means of judging. In Carnations and Picotees he was also a successful raiser, and his Prince Albert, Rose of Castle, Chancellor, King James, Albion's Pride, &c., have been long known; whilst amongst his later flowers Invincible (s.b.), Gem (s.b.), Marshal Ney (s.b.), Phœbus (s.b.) seem as if they would be lasting memorials of his skill. In Auriculas he was specially successful. The finest grey edge in growth (and I say this with the full recollection of

Alex. Meiklejohn in mind) was raised by him, and Headly's George Lightbody perpetuates not only his success, but the long and uninterrupted friendship that existed between him and the excellent man after whom he named it; while in such flowers as Alderman Wisbey (a fine green edge) and Alderman Charles E. Brown (grey edge), only sent out within the last few years, we have proof that age had no way slackened his zeal or injured his success. He thought highly, too, of a Potato he raised some years ago, but I doubt if it is much remembered now. He had also, at the time when his friend Lightbody was so successful, raised several Ranunculuses.

He has been for some years practically withdrawn from any public interest in horticulture, but there are many who cherish kindly memories of Stapleford and its enthusiastic owner, and who will readily say that a great master in the craft has passed away from us, leaving (at any rate in the south) few to follow his steps.—D., Deal.

MR. BULL'S NURSERY, KING'S ROAD, CHELSEA.

MR. BULL'S Nursery is described as an establishment for "new, beautiful, and rare plants"—a designation which is faithfully descriptive. Other nurseries have been visited and described, but as Mr. Bull has in his possession many plants which are not to be seen in other places, his nursery merits description too. But many specimens which are not new also arrest attention by their size, condition, and value, and amongst the most conspicuous of these are the

TREE FERNS, PALMS, and CYCADS.—These plants are arranged in the large structure known as the Winter Garden, where sufficient space and height is afforded to show the specimens to the greatest advantage. The roof of this house is covered with Vines, which afford congenial shade for the plants beneath. On traversing the central path the visitor may well fancy himself as suddenly transported to an Indian jungle or an Australian forest. On either hand are plants of stately growth and spreading foliage. The groundwork is composed of the dwarf Palms, out of which rise bold trunks of Dicksonias, Alsophillas, and Cyatheas; also examples rugged, rigid, and grotesque of Encephalartos, Cycas, and Macrozamia. The Dicksonias are splendid specimens, many of them having trunks varying from 6 to 12 feet in height crowned with fronds of the finest character. Of the Cyatheas dealbata and Smithii numerous specimens vary from 4 to 8 feet in height of stems, while of the more rare C. Dregel and C. Burkel are to be seen examples of almost equally large dimensions, also a specimen upwards of 7 feet high of Alsophilla Leichardiana. The Cycads are equally fine. A recent importation of Cycas media embraces plants—or trees—which are striking alike by their size and numbers, their stems ranging in height from 8 to 14 feet. C. revoluta may be seen having a trunk 5½ feet high and 15 inches in diameter, with dozens of others of smaller yet large growth.

Noticeable also are the Encephalartos villosus, E. v. amplatus, and Vroomii. These plants have stems varying from 3 to 6 feet in height, and particularly remarkable is a specimen of the last-named now bearing two large flowers or fruits. These resemble gigantic Fir cones—or perhaps a better idea is conveyed by comparing them to tapering fruits of Queen Pine Apples minus the crowns. This specimen is worthy of inspection by all lovers of the curious and rare in plant-growth. Encephalartos Ghellinkii, which was certificated by the Royal Horticultural Society, is distinct and elegant, and may be seen in excellent condition; and Macrozamia corallipes, plumosa, and spiralis add a distinct feature to what may be justly termed this fine house of fine plants.

To enumerate the Palms would be to compile a catalogue, for all the hardy kinds are well represented, sorts more tender, new, and rare being accommodated in other structures. On the east side of the house there is a large collection of Filmy Ferns, and the walls are lined with Orchids.

Adjoining this winter garden is a house quite filled with *Phormium tenax variegatum* and *Oleisio variegatum*, the plants being of almost all sizes and in excellent colour. As lawn and conservatory decorative plants these are amongst the most effective of fine-foliated plants that can be employed. Passing through the winter garden we find a series of span-roofed houses packed together as closely as space will permit, and each packed with plants to repletion. The first of these houses entered is principally occupied with

CROTONS.—Of this genus of ornamental stove plants new

kinds are following each other in rapid succession—plants which are remarkable for brightness of foliage, elegance of form, and some of them singularity of aspect. Mr. Bull's collection of these plants is exceedingly rich. Here is to be seen a fine example of the Ram's Horn Croton (*C. volutum*) which when well grown is exceedingly distinct. Not less novel is the Corkscrew Croton (*C. spirale*), of which the establishment contains handsome specimens. *C. majesticum* is another of Mr. Bull's introductions, and is certainly one of the finest in cultivation. The Imperial Croton (*C. imperialis*) has noble foliage finely margined, and *C. picturatum* is both novel and ornate. This plant, of which Mr. Bull enables me to submit an illustration, is remarkable by each leaf proper producing a

slender filament, at the extremity of which is subtended a smaller secondary leaf. This variety is also highly coloured, the midrib being red and the blotches yellow merging to red. It is of medium growth, and is both novel and attractive. There is also an extensive collection of the new Trilobed Crotons in several varieties, and kinds even newer than these not yet submitted to the outer world. Some of the best of these are *C. elegantissimum*, a slender drooping mass of gold; *C. formosum*, finer in character than *C. Weismannii*, and richer in colour than *C. majesticum*; *C. Rex*, having the same relation to *C. spirale* as the large augur has to the small corkscrew; and *C. gloriosum*, a fine plant with long wavy foliage of creamy yellow and green. The above are but a few



Fig. 26.—CROTON PICTURATUM.

of the extensive collection of these popular and effective stove plants.

In the house adjoining the Crotons are many new and valuable plants, but none more distinct than the remarkable new *Dracena D. Goldiana*. This plant represents a totally new family of *Dracenas*, being dissimilar to the ordinary types alike in character of growth, form of foliage, and markings. The foliage is somewhat heartshaped and fleshy in texture, each leaf being transversely marked with silvery grey on a green ground. When this plant flowers and becomes either a seed-bearing or pollen-producing parent, and crosses are effected with other varieties, it is impossible to predict what the issue may be. It is a plant from which much is expected, and is doubtless one of the most cherished possessions of its owner.

There is also in the same house some new *Dieffenbachias*, the new *Artocarpus Cannani*, and on each side of the door the striking wall plants *Marcgraavia paradoxa* and *M. dubia*. No Ivy can adhere to the wall with the same persistency as these plants, for not only the stems but the leaves become affixed to the structure as if embedded in gum. At the end of this house are a pair of plants which probably cannot be

matched in Europe, and which may fittingly introduce a brief notice of the

PALMS.—The plants referred to are a pair of *Pritchardia grandis*, and truly grand they are in their massive dark fronds. They are plants of great value, not only on account of their admitted scarcity but for their noble beauty. Another new Palm is not nearly so scarce—*Geonoma Carderi*—an elegant introduction from Colombia. Of this Palm there are many hundreds, and which are now being distributed. Fine examples in almost all sizes are seen of the most graceful of all Palms—*Cocos Weddelliana*, and perhaps greater numbers of the charming table Palm *Dæmonorops palembanica*. The Silver-leaved Palm (*Astrocaryum argenteum*), is also noteworthy, and not less so is the Blue Palm (*Sabal cærulescens*), a blue tinge suffusing the leaves and especially on their under surfaces. *Kentias*, *Livistonias*, *Arecas*, *Martinezias*, and numerous others are represented in various sizes and in large numbers. Entering another house we find several "new and rare" plants, including a choice selection of

ARALIAS.—These are the princes of table plants, and are indispensable for decorative purposes. One of the most hand-

some is *A. elegantissima*. The leaves are digitate and pendulous, of a very deep green, the midrib of each leaflet being white, and with white-mottled footstalks. *A. leptophylla* is also a fine species with very dark stems; the leaves are green distinctly mottled with white. *A. maculata* is also striking by its purple hue and distinct green spots; but one of the most elegant and not sufficiently known is *A. gracillima*. It is almost impossible to depict the slender elegance of this plant. The stem is erect; the leaves springing from it and for a foot of their length are horizontal, when they gracefully recurve and taper to a point. They are bright green with ivory-white midribs. This is undoubtedly one of the most distinct and chaste of the *Aralias*, and will prove of great value for table decoration. Besides these are some new kinds which are not yet in commerce.

In this house is a large stock of the new *Gustavia gracillima*, which was sent from Colombia by Mr. Roehl. It was figured in the "Botanical Magazine" for March, 1875, and the flower as figured there and also in Mr. Bull's catalogue is extremely bold and striking. Near it is a batch of the dark-foliated plant *Eranthemum tricolor*, which at the first glance reminds us of the *Iresines*. The colour is olive green with purplish and pink blotches. It is evidently of free growth and easy culture.

Other large stoves are crowded with Ferns, Palms, Pandanus, and Musas, the stock of *Musa ensata* being very large and fine; and in the propagating house is a most attractive collection of *Bertolonias*. *B. Van Houttei* is in superb condition; it is popularly referred to as the "shot silk" plant, and its glistening colours warrant the appellation. In fine contrast is the "Jewel Plant" (*B. superbissima*). The foliage is large, bright green, each leaf containing three rows of spots arranged with mathematical regularity, the spots being of a purplish rose colour. It is a superb plant, requiring, to have it in good condition, heat, shade, and the moist still atmosphere of a glass case. A description of this nursery would be incomplete without a brief note on the

ORCHIDS.—The stock of these plants is very extensive, roofs, floors, stages, and walls being covered with them. The plants are generally small, and fresh consignments are continually arriving from foreign collectors. The cool Orchid house was so crowded that it was impossible to walk round, but it has since been cleared of a portion of the valuable stock—valuable because the floor was covered with hundreds of healthy plants of the fine new *Odontoglossum citreum*, which was recently certificated by the Floral Committee of the Royal Horticultural Society, and was generally considered to be one of the most important introductions of late years. The plant is evidently of hardy constitution and easy growth; it is a free bloomer and will probably become as popular as *O. Alexandræ*.

Amongst the general collection of Orchids many were in flower, the most notable being *Cattleya citrina*, of which the stock is immense; *Burlingtonia fragrans*, the perfume exactly resembling that of May blossom, but is more powerful; *Cypripedium* in variety; *Dendrobium Wardianum* and *litiflorum* in excellent varieties, and the dainty gem *D. barbatulum*. For affording out blooms for bouquets and sprays for wreaths this pure and free-flowering species is invaluable.

Besides the Orchids growing and flowering, a consignment of plants just arriving demands notice as conveying an idea of the magnitude of Mr. Bull's transactions as an importer. Of *Sophranites grandiflora*, *Dendrobium*, *Vandas*, and *Aërides* there were certainly some hundreds being unpacked, and of *Pleiones* there were many thousands—in fact, the *Orcus*-like bulbs filled seventeen boxes of 3 feet square each. These are principally *P. humilis*, and had arrived in excellent condition. It is certainly the largest importation which has ever arrived in England.

There remains one more plant to notice which—the name at least—has recently been in everybody's mouth—*Erythroxylon Coca*. This now celebrated plant is included in the official collection. For many years it has but rarely been inquired for, but now the demand for plants can scarcely be met.

The nursery is densely crowded with plants, all space under glass being filled, and the outside squares packed with *Lilliums*. A business-like activity pervades the establishment, and every part is in good order.—W.

DIELYTRA SPECTABILIS as a decorative plant for the greenhouse or conservatory in spring is not so generally used as it deserves. It is well known as an occupant of mixed borders,

&c., flowering in summer; but there being such abundance of other flowers at that season, I think it is only by using it for the purpose referred to that its beauty can be fully appreciated. Here it has been in flower for some time past in the conservatory with charming effect, in gracefulness and beauty I would almost say surpassing even the *Fuchsia*. It certainly far more than repays the trouble it costs. What can be more simple than sticking a few roots into pots in the autumn, and wintering them in a cold frame?—J. HARDIE, *Logie Mar*.

REPORT ON PLANTS GROWN FOR TRIAL AT CHISWICK IN 1875.

By THOMAS MOORE, F.L.S., *Floral Director*.

It was stated in the last Report of the Chiswick Board of Direction, that the work in the floral department had been in some degree crippled by the diminished facilities granted to the Superintendent, but that nevertheless some very good work had been accomplished. This consisted in the cultivation, with the view to a comparison of their merits, of collections of 82 varieties of bedding *Pansies*, of 125 varieties of *Fuchsias*, and of 850 varieties of bedding *Palargoniums*. The Floral Committee held several meetings during the blooming season for the critical examination of these collections, and awarded twenty-three certificates of merit to different varieties of *Pansies*, twenty-one certificates to the best varieties of *Fuchsias*, and seventeen certificates to *Palargoniums* which were considered as improvements on those previously rewarded.

The following are descriptive notes of the several varieties in each group to which certificates were awarded, the notes being sufficient to give some notion of the habit, colour, and characteristics of the kinds, and also to afford some clue to their identification.

BEDDING PANSIES AND VIOLAS.

The varieties of these plants subjected to the test of trial were contributed by Messrs. Dickson & Co. of Edinburgh, Messrs. Cooker & Sons of Aberdeen, Mr. R. Dean of Ealing, Mr. G. Westland of Witley Court, Dr. Stuart, Messrs. Milligan and Kerr, and Messrs. Robertson & Galloway. Those only are here described which obtained certificates. In several instances the certificates granted in 1874 under less favourable conditions were now confirmed. The plants were inspected by the Committee on June 9th, and again on July 16th. The following may be regarded as a selection of the best of the bedding *Pansies*, chosen from the point of view of showing compactness and dwarfness of habit, profuseness and continuity of bloom, and useful and effective colours rather than that of size and shape in the individual flowers—chosen, in fact, for those special features which give them their value as bedding plants.

FIRST-CLASS CERTIFICATES.

1. ALPHA.—*Dickson & Co.*—A very compact-growing, vigorous-habited, free-flowering variety. Flowers large, bluish purple, with a reddish flush; the eye yellow, with a bilobed dark spot in front. Good and lasting.
2. BEDFORD YELLOW.—*Dean*.—A free-growing compact-habited sort. Flowers large, bright golden yellow, with pencilled eye. Good and effective.
3. BLUE BELL.—*Dean*.—A very showy variety of compact, spreading, free-blooming habit. Flowers numerous, medium-sized, mauve purple, with a small yellow eye pencilled with dark lines. The individual flowers are deficient in shape, but the effect of the mass is good, and the plant is a continuous bloomer. Awarded a first-class certificate in 1874, which was now confirmed.
4. BLUE PERFECTION.—*Westland*.—Of compact free-blooming habit. Flowers medium-sized, of a deep reddish mauve, with yellow eye. A fine effective self-coloured variety. The variety sent in as *Purple Perfection* proved to be the same as this.
5. DR. STUART.—*Stuart*.—Of dwarf compact habit. Flowers mauve purple, with small yellow eye surrounded by a narrow dark ring. A neat and pretty flower.
6. GOLDEN GEM.—*Dickson & Co.*—A variety of dwarf spreading habit, and a free bloomer. Flowers large, deep yellow, with deeper eye, over which occur dark pencillings. Good and lasting. Awarded a first-class certificate in 1874.
7. LILACINA.—*Dean*.—A charming variety of dwarf compact spreading habit, free-growing, and very distinct. Flowers of moderate size, the upper petals of a reddish lilac, the lower ones bluish lilac, with small yellow eye. An exceedingly pretty and taking flower.

8. **LOTHAIR.**—*Dean.*—A novel variety, with a dwarf compact habit of growth. Flowers large, deep purple, with small yellow eye and broadish bronzy spot just below it on the lower petal. A distinct and rich-looking flower, of lasting quality.

9. **LILY-WHITE TOM THUMB.**—*Dean.*—A very useful variety, of free compact spreading habit. Flowers white, with yellow eye and dark pencillings. The flowers are tolerably constant as to purity, but they occasionally blotch in hot weather. The first-class certificate awarded in 1874 was confirmed.

10. **MAGIE, or LA PIE.**—*Dean.*—An old French variety, still useful because striking in appearance from the strongly contrasted colouring of its flowers. It is of vigorous but rather tall-growing habit, of a hardy constitution, and an abundant bloomer. Flowers blackish mulberry, with a large wedge-shaped spot of white at the tip of each petal; the spotting sometimes runs out, when for a time the flowers become self-coloured.

11. **MULBERRY.**—*Dean.*—A dwarf-growing variety of compact but spreading habit, and free-flowering. Flowers dark reddish plum purple, with very small yellow eye; the flowers are well displayed. The first-class certificate of 1874 was confirmed.

12. **NOVELTY.**—*Cocker & Son.*—A showy variety, of free-growing habit, but growing rather tall. Flowers reddish or puce purple, with yellow eye; showy. A pleasing variety amongst the self-coloured flowers.

13. **PEACH BLOSSOM.**—*Dickson & Co.*—An attractive variety of close habit, and a free bloomer. The flowers, which are of good form, are of a curious motley colour, a reddish or puce-lilac, paler at the tips. Its neutral tint was thought likely to be useful in grouping.

14. **PRINCESS OF TECK.**—*Dean.*—A very free-growing variety, and a continuous bloomer. The flowers are large, of good form, and of a pale bluish lilac. It is quite novel in colour, somewhat approaching that of *Lilacina*.

15. **QUEEN.**—*Dickson & Co.*—A variety of free compact habit, an abundant bloomer, but rather later than some others. Flowers large, white, with yellow eye and dark pencilled lines. The first-class certificate awarded in 1874 was confirmed. It is not, however, a lasting sort, as it was quite out of bloom when inspected in July.

16. **QUEEN OF LILACS.**—*Dickson & Co.*—A variety of free bold habit, forming close vigorous tufts. Flowers reddish lilac, paler at the edge, being freely produced; a soft neutral colour, and useful for grouping. It was considered to be novel and effective, and on these grounds received the certificate.

17. **ROYAL BLUE.**—*Dean.*—A deep purplish blue, with a dark eye. A showy and attractive flower, of good quality, and lasting.

18. **SOVEREIGN.**—*Dickson & Co.*—Of close-growing habit, dwarf, free, and prolific of blossoms. Flowers moderate in size, of a bright deep golden yellow, with a pencilled eye. Very effective, and a good lasting variety.

19. **THE TORY.**—*Dickson & Co.*—A variety of free and vigorous growth, blossoming abundantly and continuously. Flowers large, deep bluish purple, with white eye and a bilobed mulberry spot in front of it. Good throughout the season. The first-class certificate awarded in 1874 was confirmed. Under the name of *Monarch* was grown a variety not distinguishable from this in the colour of its flowers.

20. **WHITE SWAN.**—*Dean.*—A fine variety, of close tufted habit. Flowers of moderate size, pure white, with pencilled eye, of good substance, and very clean and chaste-looking. Fine.

21. **WILLIAMS.**—*Stuart.*—A free-blooming variety, raised from *Viola cornuta* fertilised by *True Blue*, a dwarf *Viola* like *Perfection*. It is dwarf and spreading in habit, the individual flowers being small, *cornuta*-like, and of a light mauve colour. The plant is very effective from the great number of its flowers, which are produced in succession till late in the summer.

SECOND-CLASS CERTIFICATES.

22. **SNOWFLAKE.**—*Dickson & Co.*—A moderately vigorous sort, of free-flowering habit. Flowers white, with a yellow eye marked by a few faint lines.

23. **TYRIAN PRINCE.**—*Dean.*—A handsome variety, awarded a first-class certificate last year, but now ranked second-class; of free compact stout-growing habit. Flowers large, dark velvety mulberry purple, with small yellow eye.

A few of the sorts certificated in 1874 were passed over on this occasion as not being in a satisfactory condition as to habit or continuity of bloom. To this category belong Im-

perial *Blue Perfection*, *Miss Maitland*, *Dickson's King*, and *Chieftain*.

FUCHSIAS.

These were grown under glass, and consisted of young plants shifted-on into moderate-sized but rather small pots. They were examined just when they had reached their best condition as to bloom. The plants were contributed by Messrs. Veitch & Sons, Messrs. F. & A. Smith, Messrs. Downie & Co., Mr. G. Smith, Mr. Knight, Messrs. E. G. Henderson, Mr. Bull, and Mr. Kinghorn.

FIRST-CLASS CERTIFICATES.

§ 1. *Whitish tube and sepal; red or purple corolla.*

1. **ANNIE.**—*Veitch & Sons.*—Of rather bold growth, but dwarf in habit. Flowers with short blush tube; reflexed flesh-coloured sepals; and large, open, carmine-red corolla. A free-flowering sort.

2. **BRILLIANTISSIMA.**—*E. G. Henderson & Co.*—An erect-habited rather vigorous-growing variety. Flowers with a greenish white tube, reflexed sepals, and a dark crimson corolla; very fine in colour, but rather small. Certificated on account of the habit of the plant, which was excellent; in the way of the variety called *Lustre*, but superior to it.

3. **JOSEPHINE.**—*E. G. Henderson & Son.*—A variety of dwarf and stocky but rather vigorous growth. Flowers with long blush tube, and short reflexed sepals, and bright rosy pink corolla.

4. **MARGINATA.**—Of free bushy habit, and a free bloomer. Flowers with short blush-white tube and reflexed sepals, and a rosy tinted corolla with crimson margin.

5. **SCHILLER.**—A finely-shaped, free-growing, bushy plant, of drooping habit. Flowers with a blush tube and spreading sepals, and a purplish corolla. The flowers are larger and better than those of *Rose of Castile*, which they resemble in colour. The habit is excellent.

6. **STARLIGHT.**—*Veitch & Sons.*—A free-growing and free-blooming variety of excellent habit. Flowers large, with long white tubes and sepals and long bright rosy-lake corolla. One of the very best of the pale-coloured series.

7. **WATER NYMPH.**—*E. G. Henderson & Son.*—A dwarf, free-growing, bushy-habited variety. Flowers with bluish tube and straight sepals, and a crimson corolla. A very desirable variety.

§ 2. *Scarlet tube and white corolla.*

8. **ALEXANDRINA.**—*Veitch & Sons.*—A slender, drooping, free-growing, and exceedingly bright and attractive sort. Flowers with short bright red tube and reflexed sepals, and a fine white corolla.

9. **MRS. E. BENNETT.**—A free-blooming, free-growing, erect-habited variety. Flowers with very short red tube and long spreading sepals, and a very large spreading white corolla. Very distinct and fine.

The certificates already awarded to the following varieties in this section were confirmed—namely, to *Conspicua*, *Puritani*, and *Pursuit* (singles), and to *Enchantress* (double).

§ 3. *Scarlet tube and purple corolla.*

10. **EMPERESS OF GERMANY.**—A variety of dwarf bushy habit, dense, free-flowering, and ornamental. Flowers with a short tube and reflexed sepals of a coral red, and a large, spreading, purple corolla.

11. **FIRST OF THE DAY.**—*E. G. Henderson & Son.*—A variety of a dense, bushy, free-flowering habit. Flowers with a short coral-red tube, small reflexed sepals, and a large bold purple corolla.

12. **INDIMITABLE.**—A variety of dwarf and free habit and ornamental character. Flowers medium-sized, with a coral-red tube and spreading sepals, and an expanded violet-purple corolla reddish at the base. It is something in the way of *Empress of Germany*.

13. **WAVE OF LIFE.**—*E. G. Henderson & Son.*—A variety of weak and drooping but dense habit of growth. Flowers with short tube, and broad reflexed sepals of a brilliant coral red, and a large, long, spreading, dark purple corolla.

In this group the certificates previously awarded to *Commander* and to *Noblesse* were confirmed.

§ 4. *Scarlet tube, double purple corolla.*

14. **CHAMPION OF THE WORLD.**—*F. & A. Smith.*—A loose-habited variety with long weeping branches, and well adapted for furnishing a pillar or raster in a greenhouse. The flowers are immensely large and full double; the tube and sepals coral

red, the latter tipped with green; the corolla purple, expanding to nearly 2½ inches in breadth. It is the largest-flowered of all the double red Fuchsias.

15. *MR. LYNDON*.—A free-growing variety with very large flowers, of which the sepals are erectly reflexed and of a pale red, and the corolla bold but somewhat irregular, and of a deep purple.

16. *PRINCE LEOPOLD*.—*Veitch & Sons*.—In this variety the plant is of a bushy drooping habit and free. Flowers with a short tube and reflexed sepals, and a dark purple, compact, double corolla.

17. *TRIUMPHANT*.—*Veitch & Sons*.—A variety of rather spreading growth and tolerably free-flowering, altogether an exceedingly promising sort. Flowers with a slender tube and erect palish red sepals; the large, full, dense corolla of a rich deep purple. The individual flowers are exceedingly fine and well-formed.

Of this group the variety named Marksman had the previous certificate confirmed.

§ 5. *Pink tube and purple corolla.*

18. *HUGH MOLLEN*.—*Veitch & Sons*.—A variety of free and vigorous but bushy drooping habit, well adapted for furnishing a pillar or rafter, being not only showy but distinct in character. Flowers large, with a long, slender pink tube and spreading green-tipped sepals, and a bold and spreading purple corolla. A very effective ornamental variety.

§ 6. *Variegated leaves.*

19. *AUCUBEFOLIA*.—*E. G. Henderson & Son*.—A very ornamental variegated-leaved variety, having greater merit from this point of view than from that of its flowers. The leaves have a large creamy-white and conspicuous central blotch, and when this variegation is well marked the plant is very handsome; but it is a form of variegation very apt to run out unless care is taken in the selection of cuttings. The flowers are freely produced, and have a long red tube and sepals, the latter not being spread out or reflexed. The certificate was given for the variegation.

20. *SUNRAY*.—*G. Smith*.—A beautifully variegated Fuchsia, the finest yet sent out, with red variegated foliage, which is quite ornamental. The flowers have red tube and sepals and a purple corolla. It was certificated for its variegation.

SECOND-CLASS CERTIFICATES.

21. *ALBO-COCINEA*.—A variety of free-growing drooping habit, and adapted for a pillar or rafter. The flowers have a red tube, white spreading sepals, and a spreading purple corolla. It belongs to what is called the fancy class, and is both distinct in character and gay in appearance.

The Rose of Castile had the second-class certificate, previously awarded to it as a useful variety for decorative purposes, confirmed on this occasion, being still regarded as useful for conservatory work.

BEDDING PELARGONIUMS.

A very extensive collection of these indispensable flower-garden plants was arranged for comparison in the trial beds at Chiswick. The collection extended to 850 varieties, which were contributed by Mr. J. Fraser, Mr. G. Smith, Mr. Charlton, Messrs. F. & A. Smith, Mr. W. Paul, Mr. Tirebuck, Mr. Cannell, Dr. Denny, Messrs. Carter & Co., Messrs. E. G. Henderson & Son, Messrs. Downie, Laird, & Laing, Mr. P. Laxton, Mr. J. Pearson, Mr. W. Bull, Messrs. Veitch & Sons, Mr. R. Dean, Mr. E. Bland, Mr. Kneller, Mr. H. Little, Mr. W. W. Burrell, Mr. F. Dodds, Mr. G. George, Messrs. Low & Co., Mr. Davis, Mr. J. King, Messrs. Dickson & Co., Mr. C. Turner, Mr. F. Miles, Messrs. Garaway & Co., Mr. J. Salter, Messrs. Cocker & Son, Mr. Hodgson, Mr. Mews, Mr. Kinghorn, Mr. Porter, Mr. Chater, Mr. Barnett, Mr. Rawson, Mr. Orchard, Mr. Tillery, Mr. Evans, Mr. Grove, Mr. J. Ingle, Mr. Wimssett, Mr. F. W. Durrent, Messrs. Osborn & Sons, Mr. Swarback, Mr. G. Aston, Mr. Sampson, Mr. J. Clark, Mr. H. Park, Mr. S. Davis, Messrs. J. & C. Lee, Messrs. Bell & Thorpe, Mr. Tipping, and Mr. S. Ford. The following are the certificated varieties:—

FIRST-CLASS CERTIFICATES.

§ 1. *Scarlets.*

1. *HARRY KING*.—*E. G. Henderson & Son*.—A showy variety of moderately vigorous habit, with zonate leaves; the flowers are of good shape, freely produced in moderate-sized trusses of a bright scarlet, with a white eye.

2. *ROSA LITTLE*.—*H. Little*.—A dwarf-habited variety, the

leaves having a vandyked zone; the flowers, of which both pip and truss are large and fine, are of a rich deep solid scarlet colour, with a small white eye. The flowers are well displayed, and of exquisite shape.

3. *TYRSEL RIVAL*.—*Laing*.—A dwarf compact-growing variety, the leaves of which are marked with a dark zone; the flowers are large, of fine form, and produced in tolerably full trusses, the colour being a rich scarlet with small white eye. It is a fine zonal scarlet.

4. *GENERAL OUTRAM*.—A variety of medium vigour, and of a spreading habit of growth. The leaves are dark-zoned; and the flowers, which are borne in large bold trusses, are of a rich deep scarlet, the individual pips being of free shape and quality.

§ 2. *Rosy crimsons or cerises.*

5. *CAXTON*.—*Pearson*.—A variety of moderately dense habit and of even growth. The leaves are green without zones. The flowers are moderate-sized, in rather small but dense trusses, and are of an intense rosy crimson and very effective.

6. *COL. WRIGHT*.—*Pearson*.—A fine, close-habited, and very showy variety, of medium vigour of growth. The leaves are green, not zoned. The flowers, which are freely produced in large trusses, are of a light rosy scarlet, and very showy. The flower trusses are abundant, and hence very effective, as well as from being whole-coloured, which gives them a density and solidity which is absent from shaded flowers.

7. *MARK TWAIN*.—*F. Miles*.—A dwarf-growing variety of spreading but compact habit, and a free-bloomer. The leaves have a dark zone, and the flowers are large, in large trusses, and of a deep opaque scarlet. The individual pips are fine, and hence the variety is an effective one.

8. *MRS. J. GEORGE*.—*W. Paul*.—A variety of dwarf and moderately vigorous habit. The leaves have a broad faint zone. The flowers are produced in remarkably fine trusses, and are individually of good size and possess form as well as quality, the colour being a pale scarlet.

§ 3. *Pinks.*

9. *LADY EMILY*.—*Pearson*.—A dwarf-growing vigorous variety of spreading habit, with pale green leaves. The flowers are of a bright deep pink, white at the base of the upper petals, the pips being large, and the trusses fine.

10. *LUCY*.—*Pearson*.—A variety of tolerably compact habit, and a free bloomer. The flowers are of a fine rose pink and are borne in medium-sized trusses.

11. *MRS. AUGUSTA MILES*.—*Pearson*.—A compact-growing variety of moderate vigour, with green leaves of medium size. The flowers are borne profusely in trusses of moderate size of a deep bright pink with white eye, which makes them very attractive.

12. *MRS. HOLDEN*.—*Pearson*.—A variety of compact even growth, producing its medium-sized trusses of blossom in profusion. The flowers are of a bright pink colour and remarkably showy.

§ 4. *Bronze Zonals.*

13. *REV. O. P. PRACH*.—*Laing*.—A showy variety of dense compact even growth, with large leaves of a greenish yellow colour, marked by a broad deep copper-coloured zone. Flowers light scarlet.

14. *W. E. GUMBLETON*.—*Laing*.—A variety of compact growth. The leaves greenish yellow, with a broad zone of a dark bronze colour, and a narrow yellow-green border. Flowers scarlet.

§ 5. *Gold-leaved.*

15. *GOLDEN HARRY HIGOVER*.—*E. G. Henderson & Son*.—A variety of dwarf, spreading, free-growing habit. The leaves are golden green, with a narrow vandyked zone of dark bronze and broad golden edge, very showy. Flowers scarlet. A very desirable variety.

§ 6. *Ivy-leaved.*

16. *GEM OF THE SEASON*.—*S. Ford*.—A variety of free rambling growth, with green Ivy-like leaves, and abundant flowers of large size and a pale rosy pink colour. The flowers are very freely produced, but do not stand well; it will nevertheless be useful for baskets.

17. *ARGUS*.—*G. Smith*.—A variety of moderately free growth, with green Ivy-like leaves slightly marked with brown. The flowers are of a deep rosy pink with dark spots on the upper petals, and are of a tolerably good shape.

It is proposed amongst the other trials of 1876 to grow all the Ivy-leaved varieties obtainable, and which are now rather numerous, as pot plants, since they are an extremely interest-

ing group, and are more useful under glass than in the flower borders.

SUTTON'S WHITE SPROUTING BROCCOLI.

THIS is the most distinct and most productive Broccoli of the kind that I have ever grown, and as such I wish to call attention to it now that the time has come to sow seed of it to raise plants for next season's use. With me it has come in a little before the Purple Sprouting. It is a compact grower, and appears to have a hardy constitution. You can cut a fair-sized head, and the sprouts come in well in succession.

My plants are not large, neither do I ever grow them large, for I believe Broccolis can be and are often overgrown, especially the sprouting kinds, when severe frosts often prove fatal to them. While on this matter let me ask, Is it true that in general every little plant of Broccoli has been destroyed by the rigour of winter? In some less severe winters whole acres have been swept off by the frost; and if what I ask be true, I should think it would be a matter worth a little discussion and inquiry as to the probable cause.—THOMAS RECORD.

ACHIMENES AND THEIR CULTURE.

FLOWERS "all the year round" must be provided in greenhouse and conservatories, or the structures fail in the purpose for which they were erected. Perhaps the spring and early summer, or from the present time till July, is the period when such structures are in their zenith of beauty; for besides forced flowers, some of the finest genera of plants are in "fullest natural beauty" at the season named. But these families of plants—Cyclamens, Cinerarias, Calceolarias, and Pelargoniums—must have their successors, and the more distinct these are in habit and colour from the flowers blooming in the open air the more effective will they be when arranged in the houses.

Now, Achimenes are thoroughly dissimilar from all outdoor-flowering plants both in habit and, the majority also, in the colours of the flowers. The plants are, further, of easy culture, provided they can, especially in the early stages of growth, be afforded artificial heat. Many valuable additions have recently been made to this handsome genus of plants, and no garden of importance can be considered completely furnished with summer decorative plants which does not contain a collection of Achimenes.

Where tubers are plentiful the work of producing fine pots, pans, or baskets of Achimenes is comparatively easy, for the tubers can be planted sufficiently closely together that without any, or very little, stopping of the plants fine masses of growth and flowers can be obtained; but where tubers are scarce, as, for instance, in purchasing new sorts, greater cultural care is required to produce plants of an effective size the first season. Yet with even a limited number of tubers good plants may be perfected, as I will proceed to show.

Some years ago on entering on a new charge in April I found that the garden was destitute of Achimenes. I found also a large conservatory, and which the family expected to be very attractive on their return from their town mansion in August. I at once ordered two dozen pots of Achimenes, which arrived during the third week of the month. They were in 8-inch pots, each pot containing three plants about half an inch high. With this small beginning I determined to make as good an ending as possible, but did not anticipate the "large" results that followed.

The tiny plants were growing in peat, and were placed on a shelf in the Cucumber house, and were carefully watered and syringed, and were slightly shaded in bright weather. When 3 inches high their points were taken out, and shortly, instead of having three shoots in each pot, I had in the case of some sorts six and in others nine shoots. When these had pushed half an inch the plants were potted into 5-inch pots in a mixture of two-thirds of peat and one-third of old Mushroom-bed manure, with a free admixture of sand and lumps of charcoal. After becoming established in these pots the plants were again stopped, and the shoots increased in number from fifteen to twenty-seven in each pot, according to the sorts, some breaking three eyes and others two. The plants with careful attention grew rapidly and were pinched a third time, and some of them produced as many as a hundred shoots. These were trained thinly out from the first, so that each grew sturdily. The plants were eventually shifted into 8-inch pots, and were afforded a compost of loam, leaf mould, old Mushroom-bed manure and bruised charcoal in equal parts.

By the end of June the plants were too large for the shelf in the Cucumber house and were moved to cold frames—that is, to frames having no artificial heat. A "cold" frame at that period is, however, what Mr. Abbey once said, really a warm stove if carefully ventilated and the sun heat conserved. On chilly nights the glass was covered for a time, and ventilation was as carefully attended to as for a house of Vines or Melons in early spring. The plants were regularly sprinkled, also slightly shaded and kept as close as possible, provided the temperature did not exceed 85°. The ashes on which the pots were placed were also kept moist, and especially in the daytime when the sun was powerful. The frames were closed early each afternoon. Under this warm-frame treatment the growth was more vigorous than in the Cucumber house, and some of the plants were in the autumn 3½ feet in diameter, and almost complete balls of flowers, the weaker-growing kinds being proportionally less yet equally satisfactory. They were greatly admired by all who saw them, and few could believe that from three tiny tubers potted in spring such rich masses of fine flowers could be produced in the autumn.

The secret of my success in growing these plants may be expressed in two words—unremitting attention. I have grown Achimenes for twenty seasons since and have had unlimited supplies of tubers, but I have never had such fine masses as from the first "small beginning" alluded to. Tubers, soil, means, conveniences cannot compensate for anxious, solicitous, personal care in the cultivation of these or any other family of plants. Those cultivators who succeed the best do not simply give orders and leave someone else to attend to the plants. It is not by that system that Mr. Baines succeeded, nor is it by following out the same system that Mr. Ward, Mr. Douglas, and other cultivators so often head the lists at exhibitions. No: the winning men are the working men, as many examples prove; and it was by simply working harder, paying closer and more thoughtful attention than usual to my small but precious stock of Achimenes, that they increased to such large dimensions.

When an article is plentiful it appears to lose value and does not receive that care to which its intrinsic merits entitle it. When we have plenty of Achimenes tubers we are apt to "take things easy," feeling a sort of self-satisfied consciousness that "that crop is at any rate safe." But we forget that it is on us as the cultivators and not on the numbers of the plants that success depends. We have plenty of tubers and we use them freely, sowing them almost like sowing seeds. We know that Achimenes start well in peat, therefore peat is used; but although the plants start well in peat they do not always finish well in it, and hence it is that failures are common when tubers are plentiful—they are lavishly placed in soil that lacks sustaining power; twenty plants are perhaps raised in a pot that does not contain food for half the number, and a good beginning results in a bad ending. Achimenes, like most other plants having fine hair-like roots, start well in peat; but when a large number of plants are placed in one pot—and the plan is an excellent one—the peat alone will not sustain them throughout their season of growth. Beneath the peat should be placed soil richer in plant-food than peat, and more lasting in its character.

In potting the tubers when they are plentiful a mistake is often made in filling the pots too full of soil. That is a very simple matter, but is, nevertheless, the cause of many, if not of most, failures in plant culture. A first-class plant-grower never makes a mistake of that kind. He provides his plants with soil, and also provides the means of keeping that soil replenished with food for his plants, and this cannot be done when the pots are filled too full of soil. Before plants can have a sufficiency of food in a liquid state space must be afforded to hold the liquid. Achimenes when in free growth require much water, and frequently need more than they receive, simply because an inadequate amount of water-holding space is provided at the surface of the pots. Therefore when many tubers are potted in one, and possibly the blooming pot, let the drainage be ample, the soil rich and rough at the bottom, the surface light, and the pots not filled—if large, to within 2 inches of their rims. If that plan is adopted too many tubers will not spoil the plants; but if it is not adopted—if the pots are filled quite full of light soil only—then the plants cannot receive the support which they need, and plenty (as is too commonly the case), ends in comparative failure.

Besides being adapted for cultivation in pots of various sizes, Achimenes are amongst the finest of basket plants. Baskets lined with moss and filled with suitable soil may be

planted with tubers all round, and if the baskets are placed in a proper temperature and are carefully watered they will in a few months be perfect balls of flowers. White, mauve, and pink varieties, planted in mixture, have a charming effect.

A few of the best sorts of Achimenes are *Longiflora major*, *Longiflora alba*, *Stella*, *Williamii*, *Advance*, *Dazzle*, *Ambroise Verschoffelt*, *Dr. Hogg*, *Carminata elegans*, *Kelipse*, *Margaretta*, *Pink Perfection*, *Sir Teobert Thomas*, *Purpurea elegans*, *Scarlet Perfection*, *Sparkler*, and *Aurora*. The above are moderate in price, and if well cultivated will add more to the adornment of the conservatory than almost any other summer and autumn-flowering plants.—A SURREY GARDENER.

PLANTING-OUT CLIMBING ROSES IN GREENHOUSES.

THERE are very few greenhouse climbers more attractive when in bloom than a healthy well-blossomed Rose. However beautiful Roses may be in pots, there is no way they look so well or do better than when planted-out and allowed to ramble about in a semi-natural manner. What clusters of blooms they do produce then! and the substance is generally quite equal to their numbers.

In small houses where there are no centre bed the Roses must be planted at the end or under the side shelves. They do not require a very large space for their roots, but what is allowed them must be well prepared. The space for each Rose root should not be much less than a yard all ways. The bottom, before the soil is placed there, should be made so that the superfluous water can pass away freely, and above all things the soil should be of a substantial description. Heavy loam approaching to clay well mixed with old cow dung is an excellent compost. In filling this in it should be thoroughly trodden from the bottom upwards. The plants generally do best when they are planted young, but old plants in pots may be shifted also with a little extra attention.

From what has lately been said in your pages pro and con on the various roots your readers may take their inferences and act accordingly. For most climbing Roses I prefer the *Manetti*. When the Roses have been growing in pots previously they may be planted out at any time of the season. If in full leaf the roots should not be much disturbed, but they soon recover the change if carefully planted and well watered. Whatever size the plants may be they should in the following pruning be closely cut.

Pillar or rafter Roses should never be allowed to become naked near the bottom, and they have always an inclination to rush up at first unless well restricted. As the plants become older they may be allowed to carry more old wood if it will not interfere with the well-being of other inmates. When the young growths can be allowed to hang as they grow until they bloom the effect is much finer than when twisted and tied-up. This is particularly the case on pillars and rafters. When the plants cover a large space on the roof the young growths generally incline towards the glass, and to see and have the blooms in good form the shoots must be tied down in as neat a manner as possible. It is difficult to say whether some Roses look finest round a pillar, up a rafter, or covering a large space on the roof. For quantity of bloom with most subjects the latter mode is vastly the best, but not the neatest. However, most of the climbing Roses produce plenty of wood, and being very tractable they may be trained according to the space there is at command.

Generously-treated planted-out Roses in greenhouses are not very liable to be badly affected with mildew or insects. Green fly is about the most troublesome, and it is easily destroyed either by syringing the leaves with water mixed with a little tobacco juice, or fumigating. The trees should always be examined and thoroughly cleaned before the blooms begin to open, as it is more difficult to cleanse them afterwards without doing mischief.

Before the blooms open, or indeed as soon as the buds are formed, plenty of manure water is of great assistance in swelling the blooms. After the second year a rich surface-dressing should be given annually. At pruning time all ties should be loosened, and the wood and everything about it washed and made thoroughly clean. When the plants are in vigorous growth they have a great tendency to become crowded. Apart from the pruning before growth begins, shoots which are very strong and unfruitful-looking should be cut closely back or removed altogether. A few extra blooms may be obtained for

a short time by a great pressure of wood, but overcrowding ultimately is ruinous.

One of the very finest scandent Roses for any position, and a favourite of mine, is *Maréchal Niel*. An amateur friend who devotes a small house 12 feet by 8 feet to this variety, has at the present time a thousand blooms and buds on a single plant in this little space. Last year there were more wood and fewer blooms on it. In the autumn more than half the wood was cut out, the ordinary thick not over-old wood being left, and now the result is most satisfactory. This Rose seems to do well under either good or bad treatment. I know a person who is cutting splendid blooms of it now from a plant that has had no attention whatever throughout the whole winter. The blooms have a pendulous habit, and they are alike useful for button-holes or vases. They will open during the end of March in any house without artificial heat, and continue throughout April and part of May, when it is only to be regretted there will be no more blooms until the following spring.

For continuous flowering, that other excellent climbing Rose *Gloire de Dijon* is superior to the *Maréchal*. *Gloire de Dijon* comes in a little later and blooms equally as freely as *Maréchal Niel*. The half-open flowers of climbing *Devoniensis* are beautiful in their form and purity, and exceedingly well adapted for bouquets, but for general blooming the variety is not worth the space it has a determination to occupy under good, bad, and indifferent circumstances. I have never seen it in even decent-like bloom, a small cluster of buds here and there being its entire produce. It is not a Rose for indoors, nor out either if space is scarce.

Other good climbing Roses which are thoroughly capable of repaying any attention which may be given them are *Cloth of Gold*, generally shy in blooming in the open air, but fine under glass; *Belle Lyonnaise*, *Souvenir de Paul Néron*, *Opélie*, *Gloire de Bordeaux*, *Marie Van Houtte*, *Le Nankin*, *Madame Jules Margottin*, all Tea-scented; and *Triomphe de Rennes*, *Céline Forestier*, and *Solfaterra*, *Noisettes*.—J. MUR.

NOTES ON VILLA AND SUBURBAN GARDENING.

HARDENING-OFF bedding plants is doubtless one of the most prominent matters for villa gardeners to consider now. It is not of so much importance that plants be removed into cooler quarters as it is that they be protected when they are there, and in such a way that they shall not receive a check but still make the desired progress in the short time between now and planting out.

It is now quite time that such as *Tom Thumb* and other plain and zonal-leaved *Geraniums* be placed in earth pits, or trenches just dug out deep enough to shelter them from cutting winds, as these affect them as much as anything after being nursed-up under a more secure covering. Poles laid across these trenches at intervals, and just high enough to clear the leaves, will support the covering, which must be used every night, for although the weather is now fine and warm it is most likely to very suddenly turn cold again. The bottom of the trenches should be well covered with ashes to prevent worms from entering the pots.

Other plants may be placed on a warm border or under a wall, where they must be similarly protected. Of course if there are plenty of frames to spare there is no need of all this labour, because the lights can be thrown off when required, and if necessary the frame hoisted on bricks to admit air underneath. In such a frame the plants can remain till they are planted in the beds. The variegated sorts and the choice tricolors must not on any account be exposed too much yet, but if possible be kept growing, as they seldom become too large by bedding-out time.

All spring-struck plants must be kept growing; but some of the *Verbenas*, such as *melindres* and *pulchellum*, are hardy enough to stand out with *Geraniums*. *Alternantheras*, *Heliotropes*, *Iresines*, *Lobellias*, and similar plants must all be worked-on as far as possible, and shifted about in different places most conducive to their health. Stocks, *Asters*, *Perilla*, *Zinnias*, and *Phlox Drummondii* all should be pricked-out in boxes or earth beds, and as near the glass as possible, to make them dwarf and sturdy.

HARDY FERNERY.—This ornamental place must now be attended to—that is, all the dead fronds and other rubbish that have accumulated must be carefully cleared off, so as to allow the young fronds to come up. Watch often for snails that eat the most delicate of the Ferns, and the most weakly plants should have special care, or they may go off. A top-dressing of peaty soil would benefit the Ferns, previously removing a portion of the old surface soil. All faulty places should be repaired now that it can be done easily. In making one of these ferneries it must not be supposed that only a shallow soil is required; for although

a Fern may be placed in a narrow crevice, the roots often run deep in such places, therefore provide a good depth of soil and plenty of drainage.

FRUIT GARDEN.—I do not find much injury done to the blossom about Maidstone by the severe weather, though there are complaints in different parts of the country that Pear bloom has been cut severely. We have around us a capital show for fruit. Gooseberries are set freely and are swelling off well. Among Apples there is a good show, but the blossom is not out yet. The protection has not yet been taken from the Peach trees, the young fruit just set is too tender for full exposure. One turn at disbudding has helped the young growth a little, but I perceive that before many days the trees must all be well syringed from the garden engine, as green fly is coming fast, and this with the cold nights makes the leaves curl and become blotchy. Where the young leaves have been exposed they have turned brown with the cold, but warm nights will soon alter that.—**THOMAS RACORD.**

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

LAST week we had to write of wintry weather, and the fair prospects of good crops of hardy fruits were much endangered by the frost-winds. On examining the trees, however, this week the blossoms do not seem to have suffered much. Pear and Plum trees were in full flower, and the temperature fell to 27° Fahr., or 5° of frost; the same night one-third of an inch of sleet and snow fell with an east wind. This seemed sufficient to cause grave apprehension for the safety of expanded blossoms. Apple trees are not yet in blossom, but nearly all the Cherry trees are sheets of snowy whiteness. At present the weather is all that can be desired—occasional showers and drying winds, with a night temperature ranging between 40° and 45°.

As the usual work is well forward, the Dutch hoe has been kept at work amongst all sorts of trees and berry-bearing bushes. Many persons have a notion that the hoe is only required when weeds are abundant, and some workmen will not trouble to stir the ground except where weeds are seen. The hoe should be worked carefully over every part of the ground, so that all incipient weeds may be destroyed and the surface loosened.

Trees that have been grafted should be attended to; the clay is apt to crack and admit air to the point of union. If this is so the cracks should be filled-up with a little moist clay. We grafted Pear and Apple trees this year, and the clay was mixed with a portion of hay cut finely in a chaff-cutter, and although the weather has been dry since there has been no cracking of the grafting clay.

Wall trees will also require attention. Apricots may now be thinned, removing the smallest fruit and such as may be in a position where it cannot swell well. Peach and Nectarine trees may be disbudded. The earlier that this operation is performed the better will it be for the trees. When the growths are much advanced the trees receive a check unless the shoots are thinned-out by degrees. If disbudding is done at the time the fruit sets nearly all the superfluous buds may be removed.

Now is the time that the Peach aphid is to be seen on the young growths; but whether it is discernible or not, the trees should be well syringed with soapy water. It will have a better effect if a little tobacco liquor is mixed with it. Last year our Red Currant bushes were much injured by the attacks of green fly. It was too late to syringe them after it was observed, and being busy with other work at the time the insects increased rapidly. Should the aphid appear this year the bushes will be syringed with the same water as has been recommended for Peach trees. The careful cultivator if he can spare the time should look over his trees and bushes every day at this season, and wherever insect pests appear they should at once be destroyed. The Gooseberry caterpillar and the larvæ of the lackey moth will soon be, if they are not already, at work in their several vocations. It is not only much better to destroy them in their early stages, but it is much easier.

Plants of Black Prince or Keens' Seedling Strawberry that have borne a crop of fruit in pots may, if they have been gradually inured to the cold, now be planted out on a piece of prepared ground. The plants will in all probability bear a crop of fruit in autumn.

ORCHARD HOUSE.

The trees have grown to the utmost limit allowed them, and as the young growths have made good progress it will be necessary to stop them well back at once. We have looked over the Peach and Nectarine trees, as many of them were infested with brown scale. Where it was observed it was removed by hand, and the place washed with strong soapy water. There is no appearance of aphid on any of the trees. Should it be detected the house will be promptly fumigated with tobacco smoke. There is a double row of Strawberry plants on shelves all round the house; but the plants require to be thinned out at this

season, otherwise they become drawn. The plants are much injured if they are crowded too closely together on the shelves.

VINERIES.

Pot Vines.—It is now a critical time with these, for if they receive a check at this season they may not recover again. They must be repotted into larger pots as soon as they require it, and the potting must be done in a careful manner. Good turfy loam, to which has been added a liberal portion of crushed bones, is as good a material as can be obtained for them. The drainage should be placed carefully in the bottom of the pots, and over that the fibrous loam free from mould. We are careful with all the repottings as to the drainage; but when the Vines are placed in their fruiting pots it is quite necessary that great care should be exercised, as if the drainage is choked the Grapes will not finish off well. We have had fruiting Vines from the nursery, and the canes looked very well and seemed all right for a crop the following season, but on examining the drainage we have found three or four large pieces of tile thrown in carelessly, so that the compost had become mixed with them, and the free outlet of water was impossible. A large piece of broken pot should be placed over the drainage hole to leave a hollow space; a few more large pieces must be placed carefully over it by hand, with the concave side under; over these smaller pieces should be filled-in sufficiently to form a level surface. This is in order that the compost may be drained equally. The crocks may, and are oftentimes, put in so that one side of the pot is well drained and the other not at all—so that one side is full of healthy roots while the other side is sodden. After the Vine has filled its fruiting pot with roots it may require water twice daily. Syringe freely to keep off spider.

There is not much work required in early vineries. The stoning period seems to be safely past, and the fruit has taken its second swelling. At this time the borders have a good soaking with manure water to carry the Vines over the period from the time the Grapes begin to colour until they are all out. Many Grape-growers maintain a very dry atmosphere in their vineries during the colouring period; but this is a mistake. Black Hamburgh Grapes will colour better in a moderately moist atmosphere, and the bunches are better if they are fairly well shaded from the sun. Muscats, on the other hand, colour better and take on that fine golden colour so much appreciated if the bunches are exposed to the sun. A little air should be admitted at night, as well as affording free ventilation by day.

FLOWER GARDEN.

This is a busy time for the florist. The Auriculas are now in perfection, and the aim of the cultivator is to keep them in flower for as long a period as possible. Our plants have all been removed to the north side of a wall from the exposed part of the garden where they were wintered, and where they remained until the flower trusses were partly opened. Here they have no morning sun, and the solar rays do not touch the frames until three in the afternoon. It is necessary to shade the plants if the sun is bright from that time until five, when the shades and—if the air is calm—the lights also are removed. To keep Auriculas healthy they must have a good supply of fresh air. The old growers and many of the modern growers do not tie the trusses up; some varieties do not require it, but others are apt to fall over, and a slight stick keeps the truss upright. Plants that have finished flowering should be removed to a frame where they can be more freely exposed to light and air than are the plants in flower. The plants ought not to be crowded closely together at this time.

Tulips are still much neglected, but those who do grow them will be very anxious at this time as the flowers will soon be open. Border Tulips are usually left to chance, but choice varieties in the beds must be protected from frosts by canvas coverings. Sunshine and driving rains, even high winds, injure the bloom very much. If the weather is favourable the coverings must be removed.

Pinks in beds also require a little attention; the flower stalks are considerably advanced and require to be supported with neat sticks. The beds of course are stirred on the surface and all weeds removed. If dry weather continue we shall dress the surface with decayed manure and also water the plants. Carnations and Picotees have all been repotted. It would be better to turn the plants quite out into the open ground if the weather should continue favourable; but as the plants are in frames they will remain there for a week or two longer. The frames have been fumigated to destroy green fly.

If all the Hollyhocks have not been planted out they ought to be attended to at once. Unlike the Dahlia they do not suffer from frost, but if the plants have been propagated in hotbeds they ought to be gradually inured to the cold before they are planted out. If sufficient stock of Dahlias have not yet been propagated the cuttings should be inserted singly in small thumb pots, and the pots plunged in a brisk bottom heat. As soon as they are rooted repot, still keeping them in the heat to forward them for planting-out about the end of May. The ground ought to be deeply trenched and highly manured to

grow Hollyhocks and Dahlias well, for the plants are gross feeders.

All the hardiest of our bedding plants have been placed in turf pits, and the more tender subjects are in a low heated pit, where the lights can be removed in fine weather, but where the plants need not be subjected to a lower night temperature than 45°.

Half-hardy annuals were sown in frames. The seeds have now vegetated, and as soon as the plants are ready they will be pricked-out into boxes, where they will be gradually inured to the open air, and when large enough will be planted where they are intended to bloom. We grow a few of the Rhodanthes, double Portulacacas, &c., in pots, and find them very useful in the greenhouse.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

ALEXANDRA PALACE. Flowers, May 5th and 6th. Roses, July 7th and 8th. GLASGOW. May 10th, and September 12th and 13th. Mr. F. Glib. Doughall, 167, Canning Street, Sec.

WESTMINSTER AQUARIUM. May 10th and 11th, May 30th and 31st, July 5th and 6th.

CRYSTAL PALACE. Flower, May 19th and 20th. Rose, June 16th and 17th. TYNEMORE. May 24th and 25th. Messrs. A. Payne and J. Mills, Hon. Secs. UNDERCLIFF. May 31st. Mr. T. H. Clough, Hon. Sec.

MANCHESTER (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.

SOUTHAMPTON. June 5th, and August 5th and 7th. Mr. C. S. Fulde, 29, York Street, Sec.

SOUTH ESSEX (LEYTON?). June 18th. Mr. G. E. Cox, Wilmet Road, Leyton, Sec.

EDINBURGH (Scottish Pansy Society's Show). June 16th. Mr. N. M. Welsh 1, Waterloo Place, Edinburgh, Sec.

COVENTRY. June 19th. Mr. T. Wilson, 8, Portland Terrace, Sec.

MAIDSTONE (Roses). June 21st. Mr. Hubert Bensted, Rockstow, Maidstone Sec.

FARNHAM AND SOUTH HAMPSHIRE. June 21st. Mr. H. Smith, Sec.

SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.

EXETER (Roses). June 23rd. Mr. T. W. Gray, Hon. Sec.

BRIGGATE (Roses). June 24th. Mr. J. Payne, Treasurer.

BURTON-UPON-TRENT. June 28th. Mr. F. S. Dunwell, Sec.

LEWIS. June 28th, 29th, and 30th. Mr. James Birkbeck, Delph Lane, Woodhouse, Leeds, Sec.

WEST OF ENGLAND (HERRFORD). Roses. June 29th. Rev. C. H. Bulmer, Credenhill, Sec.

RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.

FRAMER (Roses). June 29th. Mr. A. R. Bally Hon. Sec.

WIMBORNE (Roses). June 29th. Mr. C. Parker, Hon. Sec.

OXFORD (Roses). June 30th. Mr. C. R. Ridley, 115, Aldate's, Hon. Sec.

BROCKHAM (Roses). July 1st. Rev. A. Cheales and Mr. C. Mortimer, Secs.

MARSDEN. July 1st. Mr. J. H. Edmondson, Hon. Sec.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY. July 5th and September 18th.

SOUTHPORT. July 5th, 6th, 7th, and 8th. Mr. E. Martin, Sec.

NEWARK (Roses). July 6th. Mr. F. R. Dobney, Sec.

HALLESBURGH (Roses). July 13th and 14th. Mr. J. Mitchell, Sec.

WILMERSLOW. July 13th and 14th. Mr. P. Appleby, 6, Linden Cottages, Hon. Sec.

KILMARNOCK. Roses, July 18th and 19th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.

TORRINGTON. July 19th. Mr. W. Blair, Hon. Sec.

WREXHAM. July 24th. Mr. J. B. Shirley, Hon. Sec.

HEADINGLEY. July 26th and 27th. Mr. T. Atkinson, Burleywood, Headingley, Leeds, Sec.

BRIGHOUSE. July 29th. Messrs. C. Jessop & E. Rawnsley, Hon. Secs.

HEWORTH (Horticultural). August 2nd. Mr. R. H. Falco, Hon. Sec.

RAVENSTAL (ROSEDALE). August 4th and 5th. Mr. M. J. Lonsdale, Sec.

TAUNTON DRANTS August 10th. Mr. F. H. Woodford, M.D., and Mr. Clement Smith, Hon. Secs.

CLAY CROSS. August 15th. Mr. J. Stallard, Clay Cross, near Chesterfield, Sec.

WESTON-SUPER-MARE. August 15th and 16th. Mr. W. B. Frampton, Sec.

PRESTON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.

SHERWESBURY. August 16th and 17th. Adnits & Nantton, Hon. Secs.

MIRFIELD HORTICULTURAL. August 19th. Mr. George Senior and Mr. John Rusforth, Hon. Secs.

NEWBURY. August 22nd. Mr. Henry Seymour, Hon. Sec.

SEATON BURN. August 24th. Mr. B. Richardson and Mr. W. Elliott, Secs.

DUNDEE (International). September 7th, 8th, and 9th. Mr. W. R. McKelvie, 26, Euclid Crescent, Sec.

TRADE CATALOGUES RECEIVED.

William Paul & Son, Waltham Cross, London, N.—*Catalogue of New Roses, Geraniums, Phloxes, &c.*

Charles Turner, Royal Nurseries, Slough.—*Catalogue of Stoves and Greenhouse Plants, Florists' Flowers, Roses, &c.*

L. B. Case, Richmond, Indiana.—*Illustrated Catalogue of Plants.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

BOOKS (Fanny Fern).—Hanslow's "Dictionary of Botanical Terms," published by Messrs. Groombridge. (Subscriber).—London's edition of

"Repton on Landscape Gardening." We know of no work devoted to the forming of a rockery. There are two chapters on the subject in "London's Encyclopedia of Gardening."

WILD FLOWERS (Miss G.).—We cannot answer your queries. The work will be continued until all the native flowering plants are portrayed.

MANAGEMENT OF VINES (F. C. H.).—It will be no advantage to train the leaders down the back wall. It is not the quantity of leaves and growths that can be produced in a given space that is desirable if they cannot be exposed to light and air. You will be successful so long as you act on the principle of producing stout wood and good foliage, maturing the growth, and keeping the leaves free from mildew and insect pests. A mode of culture which is probably applicable to your Vines is referred to by "G. W. Y." in this week's Journal.

CULTURE OF PERISTERIA ELATA (W. P.).—The potting material should consist of two-thirds of fibrous loam, one-third of peat and leaf soil in equal proportions, with a little sand if necessary. The plant requires a good-sized pot, which should be half-filled with clean drainage. When in growth the plant should not be allowed to become dry at the roots, but when growth is completed a good season of rest is necessary. It requires a minimum temperature of from 55° to 60°, and a moist atmosphere when in growth. It throws up its flower spikes from the sides of the pseudobulbs from July to September.

GROWING CUCUMBERS IN A GREENHOUSE (A New Subscriber).—We presume the box is well drained—i.e., has a number of holes in its bottom to let out water. At the bottom you will need some rough crocks, placing a large one over each hole, and over it 8 inches in thickness of similar crocks, with an inch thickness of smaller-sized particles, and over that an inch or two in thickness of the rougher parts of the compost. The box should be filled with good turfy loam, with an addition of a fourth part of decayed manure, or ordinary garden soil may be used mixed with dung, but is not so good as turfy loam. When the plants are in bearing, liquid manure may be given at every alternate watering. You will not have space for any hot dung in the box, nor is it necessary.

CYCLAMEN CULTURE (Kueh).—Cyclamens have not done well this season. Keep the plants in a position near the glass until the close of May or early in June, and then turn the plants out of the pots and plant them in the open border, or keep them during summer in a cold frame. In August pot the plants, placing them on ashes in a cold frame, where they may remain until the close of September, when they should be removed to a shelf in a greenhouse.

BOWING AUCUBA BERRIES (Seybor).—Sow them at once in a sheltered situation outdoors, covering the berries about three-quarters to an inch deep, and they will vegetate in about seven months; or the seeds may be sown in the two-light pit, mixing with the coco-nut refuse an equal quantity of loam, which will be the best place for them, the soil being kept moist; the young plants will appear in autumn. You will need to give air in mild weather, and freely during summer, the lights being very useful in severe weather as a protection for the plants, and in very severe weather you may give extra protection over the lights. It is not necessary to remove the outer skin of the berries, though you may do so without injury to the seed. In summer admit air very freely, giving the plants the benefit of rains. You will no doubt have a number of varieties.

LOBELIA SPECIOSA FROM SEED (F. J.).—We practise no more than the usual treatment of these plants, and we experience none of the irregularities in the growth of the plants of which you complain. The main thing is to obtain seed of a good strain, for in some there is such a diversity in colour and in habit of plant as to have a bad effect. Stop the plants frequently before planting out, so as to have them well furnished and compact when growing in the beds.

ROSES IN LIGHT SOIL (Idem).—Salt would to a certain extent afford moisture, but we should not apply it to soil for Roses. What you want is moisture-retaining substances, as clayey marl, mixed with the soil, strong loam, and cool manure, as that of cow dung. Surface-dress with rich compost, and apply liquid manure liberally, watering overhead frequently.

KILN DUST AS MANURE (Ignoramus).—It is the dust from malt kilns, the refuse that falls through the perforated malt floor into the heating chamber beneath.

CYTHARIA SEEDLINGS (G. McC.).—The flowers are well formed, and the colours very bright, but no one can form a judgment of their merit without seeing the plants producing them.

GERANIUM LEAVES SPOTTED (M. D.).—They are attacked by a parasitic fungus, *Ecdium Geranii*. Pick off all the leaves affected, then dust with flowers of sulphur. After a few days the sulphur may be syringed off. To prevent a return of the fungus a little more warmth, more ventilation, and an atmosphere less damp should be provided.

FERNES (H. E. W.).—We cannot name Ferns unless the fronds sent have spores on them.

A REMOVABLE GREENHOUSE (J. B. C.).—To enable you to erect a greenhouse which you can move at the end of your lease, you must have two wall-plates, the lower one fixed to the brickwork, and the upper one in which the superstructure is fixed fastened with strong screws into the lower one. You can then draw the screws and remove the superstructure at any time. You cannot do otherwise so as to have a secure building.

BEET-LEAF INSECT (G. McC.).—The insect you have sent belongs to the order of two-winged flies, and is a *Bombus*. The proboscis is not longer than that of a bee; but it is not capable of being retracted into the mouth. It is not a common species.—I. O. W.

NAMES OF FRUITS (Y. S. M.).—The Apple called Wax Apple is quite new to us.

NAMES OF PLANTS (Virle).—1, *Spartanum africana*. (G. Davies).—1, *Cyperus alternifolius variegatus*; 2, *Nephrodium Filix-foemina*; 3, *Pteris* (Campteria) sp.; 4, *Lastrea dilatata*; 5, *Salaginella* sp.; 6, *Blechnum boreale*. We do not name more than six plants at a time. (E. H. B.).—Apparently a *Davallia* (D. canariensis?). (W. E.).—We are sorry we cannot name your Orchid from specimens sent. (Mr. Dyson).—Apparently *Polypodium Dryopteris*, but the specimen is very immature. (H. W., *Belvidere*).—*Magnolia conspicua*. (Subscriber).—We cannot identify from such scraps. Cones of Conifers and flowers from flowering plants are needed. (Mrs. H.).—1, *Narcissus incomparabilis*; 2, *N. aurantiacus fl.-pleno*; 3, *N. odoratus fl.-pleno*; 4, *N. pseudo-Narcissus*; 5, A hybrid between *N. incomparabilis* and *pseudo-Narcissus*; 6, Apparently *Arabis Turritia*, but the specimen is somewhat im-

mature. (*A. G. S.*).—*Athyrium Filix-foemina*. (*A. Paterson*).—1, *Aspidium angulare*; 2, Not in fruit; 3, *Pteris longifolia*; 4 and 5, *Pellaea hastata*.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE CHICKEN SEASON.

We are very near to May-day now, and by this time we should be able to speak about the chicken season, whether it has been a good one or no, and in what quantity chickens are to be found. We are sorry to say we have no very good news to write. The long winter seems to linger with us even now, and the broods have fared but badly. The new year opened satisfactorily, and those who had some chickens out early in January are the best off, for after then came snows, and frosts, and winds, and cold rains, all jostling one another to see which could come the fastest and do the most harm, and consequently chickens died in the shells, or struggled into life and out of it again as quickly as possible. Then came the most unsatisfactory of all calamities—clear eggs. Nests after nests of eggs were thrown away all over the country, because they were not fertile; and then followed the scarcity of broody hens. We never knew them so scarce as in this year, and we positively could not get our own to sit. They would lay and then leave off, and never become broody at all; and all through February there were some who fared even still worse, for they could not obtain eggs from their best birds. It certainly has been a pitiful sight to see the birds this spring run straight from their houses when let out in the morning to the corner of their run, which they had found from experience of many days and weeks was the most sheltered, and there they would crouch all the day long, and look the picture of misery, with the east winds blowing upon them. In the face of all these troubles it is not wonderful that the chickens are scarce and small. We have tried to have news from all parts of the country, and from a few yards the reports are satisfactory, but on the whole we think there is but little improvement from last year, which was then looked upon as being so black and unprecedented. We glean from our correspondents that there are a few good January chickens about, but that February and March afford but a miserable average, and with hardly one exception we find that where there are chickens they are to be found in warm localities, or where the runs are very sunny and well sheltered with high hedges or walls.

This year will, we think, be celebrated above all others for the clear eggs and the difficulty to get hens over a year old to lay. The utter indifference of the cocks in many yards to every single hen in his run is remarkable, consequently egg-purchasers have been unusually disappointed, and those who bought cocks or cockerels last year for breeding from again write back that they "must have been tampered with." Of the various breeds we find that Dorking chickens are as numerous as any, for we hear of many yards being well off with them both in the Coloured and Silver-Greys. Whites seem to be but few, but we have often noticed that in the White varieties, especially in Dorkings and Cochins, the per-centage of unfertilised eggs is greater than in the coloured varieties of the same breeds. Brahmas, too, are weak for Brahmas, but this breed is so enormously cultivated, and has so many friends, that chickens are sure to be found in abundance somewhere or other. Spanish seem to be very few, and French not so good as usual. We know of yards which in other years had Houdans by now crowing lustily, but this time they are all behind. Still we do not fear for Houdans; they are very hardy, and have so many admirers. Cochins we fear are not plentiful. They came so nobly out of the 1875 ordeal that we lament it the more if the report is true—that they are few and far between. Of them Buffs seem most numerous, and we hear of a few good Blacks. Whites, we are afraid, save in two or three places, make no better muster than in last year, still we hope that those old ladies who so often did duty for their daughters in the past season have gone to a better land, or that time has dealt less kindly with them, for their appearance again would be indeed monstrous. Polands seemed to have done as well as any breed until lately, when the Good Friday snow seems to have been too much for many broods, and left colds, and roup, and gapes behind where it did not entirely destroy. Game we hope have done better, for we hear of breeders bestirring themselves about champion cups, which looks hopeful; still our letters tell us they are not too plentiful. Of the less cultivated breeds which go into the variety classes we have had but little news. We know, however, of several good broods of Leghorns, Minorcas, and Silkies in various places.

This, then, is a summary of the letters we have had. We do not mean to imply that good chickens of the various breeds are not to be found in many places and in good numbers, but we believe on the whole that it has been a very bad season, and that but few early chickens will be ready for, or up to any high standard, at our summer exhibitions. We would urge, then, upon show authorities to be careful how they embark in chicken classes in their schedules, and rather allow their classes to be

"for any age," for even then a fair pair of chickens stands more chance of a prize against adult birds in their ragged summer plumage. We speak now, of course, for the summer shows, as from this week we hope chickens will hatch-out better and grow up strongly. We must remember that many a May-hatched chicken has made a noted winner, and so it is not too late to be setting eggs now. For ourselves, we mean to go on setting and hatching all we can up to the end of June, for birds hatched even then with judicious feeding and good management will grow into good stock birds, and many of them be quite ready for the late winter shows; only in setting eggs during the coming weeks we should as much as possible try to use those from hens in preference to those from pullets, as they produce stronger chickens and birds which feather more quickly, and so come to maturity and adult plumage earlier. We know eggs from two-year hens have been very few this season, and in fact we know of Brahma, Dorking, and Cochin hens which up to last week had not laid an egg this year; but now, however, in the bright sunshiny days which we hope are before us these hens should be laying freely, and we would collect and use every egg from them.—W.

POULTRY AND BIRD NEWS.

REFERRING to this column, you have put in motion that which I have often advocated—viz., a column in which those who delight in such things can freely communicate with each other, to their mutual amusement and sometimes edification.

I was lately visiting at the house of a friend who has a greenhouse divided from an orohid house by a glass partition and door. The side framework of the door is covered with rugged bark. It yet lacks some finishing; but the men had hardly left their work before a pair of Robins took advantage of a convenient place—a sort of deep cup in the bark, and made there their nest. Although someone has been at work or visiting at all hours of the day they have carried on their duty, have laid and sat, and now have young. Seated in the greenhouse with a friend last week, the cock perched just over our heads and carolled at his best. I was then made acquainted with the whole history. During several short visits to the place in the course of the day I never failed to see the old bird come with food in his beak and feed the young, not showing the least fear. In another place I have a Robin's nest with four young. My grandchildren look at them whenever they pass the spot.

I was struck by a remark of the lady of the house. There was a nest of young Thrushes in the shrubbery; they were her especial favourites. They had been seen in the morning and were missed at midday. Knowing she would be vexed, it was attempted to account for their disappearance, but she said directly, "I am not at all uneasy about them; they are old enough to leave the nest and have done so. When the Blackbirds were taken last year the old birds were about screaming all the morning, there has not been a sound to-day."—M. G.

It is a week since I heard the Nightingale first in North Hants. I have not yet heard the Cuckoo, April 21st.—H. S.

Mr. F. Green, writing to *Nature* from Cannes, France, states that on the 8th inst., for the first time this year, he heard the Cuckoo in a valley amongst mountains sixteen miles to the westward of that place. The first time last year he heard it in the same neighbourhood was on the 10th of April. April 16th he saw for the first time this year a flight of about half a dozen Swallows. They were passing over his garden coming from the sea, and going to the N.W. The nearest land to the S.E. from Cannes is Corsica, 110 miles away. Last year the first flight of Swallows which he observed at Cannes was on April 11th, and on the same day he heard the Nightingale for the first time of the season. This season he had not heard the Nightingale on the 16th.

When attempting to breed cage birds old mortar should be broken up and thrown in the bottom of the cage to assist the hen in shelling her eggs.

The habit of breaking eggs, to which cage birds are sometimes addicted, can be effectually cured by putting some putrid eggs—"stinkers" they are called by the fancy—in the cage for them to pick at.

The tail of the Fantail should form about seven-eighths of a circle, and should be flat, the under tail-coverts smooth. The carriage is a thing most important. The fan should be carried so that the ends of the middle feathers would come in a straight position over the centre of the feet, and touching the head, and must lean neither to the right or to the left.—(*American*.)

[We invite contributions to this column.—Eds.]

BIRMINGHAM AGRICULTURAL EXHIBITION SOCIETY.

A MEETING of the Council was held on the 18th inst. for the purpose of revising the prize lists.

The most important change in the potato classes was: the

discontinuance of Mr. George Wise's five-guinea cup for eight specified varieties of potatoes, that gentleman giving in its stead a champion cup value ten guineas to the winner of the first prize in the class for the best twelve distinct varieties of potatoes, twelve tubers of each. The Society's prizes in this class are also increased to £5, £3, and £2. The class set apart for the Rector of Woodstock potato was withdrawn.

Mr. Adkins reported the alterations suggested by the Poultry Committee in their department. In the classes for hens only one would be shown in future, and with regard to the Hamburg and Polish fowls the old and young birds would compete separately. There would also be new classes for Silkies, Andalusians, and Leghorns. A guinea sweepstake for the best Game cock was also opened. The first prizes throughout the Pigeon classes would be raised from 80s. to £2. There would likewise be new classes for Dragons bred in 1876 and for Dragon hens, also for young Antwerps and Antwerp hens. Towards the additional money given in prizes a few members of the Birmingham Columbian Society, who are interested in the varieties specified, had promised ten guineas. A new regulation had also been decided upon with regard to exhibitors. In the future persons who were not members of the Society would be allowed to exhibit poultry upon payment of 8s. per pen; one ticket of admission being given for each four pens exhibited. A member of the Society would be charged £1 12s. for four pens, and have six tickets of admission. The object of the Committee was to prevent two pens of good birds and two pens of bad ones being sent in order that exhibitors might obtain in tickets the amount of their entrance fees.

These suggestions were unanimously adopted.

PIGEONS—OLD AND NEW TYPES.

THINKING over the recent papers in our Journal upon the shortcomings of some of our pets, caused by want of care, knowledge, or other mistakes made by the possessors of the ancestors of these birds, it often seems to me one had better let those matters rest as they are than to be worried as we sometimes are, and sometimes taunted as faultfinders—a character which I am sure none of us labour for. Like some of my friends I have been born into the "fancy," and, of course, cannot get out of it; and having supported it to the best of my ability all my life, I find I must support it still. So against all insinuations, and against all opposition, I intend to support it in its normal points only, which have not yet been improved upon in this country.

"WILTSHIRE RECTOR" tells us he has heard of a case where a former friendship had been broken over a difference of a "feather, or the shape or the colour of a bird." Surely this is a false report. One can hardly credit that such could have taken place. I never heard of such a case, but melancholy things do take place amongst men. I was told of a case only the other day of a lady and gentleman who had not been blessed with a family, but who started an argument as to how a family ought to be, or would have been, brought up had they possessed one, and the intensity of the argument waxed so great that it ended in a separation. And once again: At the foot of my garden stands a Siberian crab tree. It was loaded and gay with bright red fruit a few months ago. Outside the railings stood two message boys looking at the tree. One said, "What beautiful cherries!" The other replied, "They are apples!" "No, they're cherries!" "No, they are apples!" And the debate ended in a stand-up fight.

A feather is a trifling thing, but a feather—one feather, will sometimes make perfection: hence the great amount of "fancy tailoring," as an ancient writer in this Journal used to term it. "Perfection is made up of trifles, but perfection itself is no trifle;" and taking this view of matters in connection with our "fancy," I begin at the beginning.

Before proceeding further, however, I have somewhat to say to our friend "WILTSHIRE RECTOR." I give him all credit for his desire to cultivate kindness in our brotherhood, but why give us in the next issue an off-hand out when he knows how sensitive we are? In his report of the Pigeons at the Crystal Palace he says, in describing English Owls, "I think all, save the very prejudiced, must have owned," &c. There is a splendid breed of horses here known as the Clydesdale horse. Should anyone rear a cross-bred animal between this and another breed of horse, surely I am not to be called "prejudiced" because I insist that the cross-bred animal is not a true Clydesdale. But I let this pass, and ask, Where did we get our standards? I do not think from Moore alone, though he is our oldest authority as the author of a history of fancy Pigeons. I believe the standards have been written by fanciers from time to time as the different kinds were introduced into this country, and after Moore's time they were bred-up to the original type till within late years. No doubt there were always weeds to be found, and ever will be. "WILTSHIRE RECTOR's" portrait of the Jacobin of 101 years ago may be a fancy one for all that we know, and does not settle the question. I have been too long connected

with the fine arts to put much faith in old drawings or engravings of natural history subjects; but it is not from descriptions given in old books or engravings that we take our stand, but from what we know and have seen.

"The parchment roll, is that the holy river
From which one draught shall slake the thirst for ever?
The quickening power of science only he
Can know from whose own soul it gushes free."

It requires a long experience and close study, not of books and pictures, but of the actual subjects themselves, their habits and general life, to portray fully and faithfully the various points required.

I need not again describe the Jacobin, the points of the true bird have already been set forth clearly; and wherever I am honoured to act as judge at our shows I shall certainly give the awards to the birds of the original type. It seems strange that so few take the trouble to favour us with their opinion publicly on matters of this kind. Were this more generally done I believe we would find the "minority" a large one. I had a good specimen of this at the late Kilmarnock Show; it was the talk of some dozen of fanciers. A single bird put into the selling class, as thought unfit for the Jacobin class because she was of the old type, had so many claimants that she had to be put up to auction, and thus realised a sum three times the catalogue price, the fortunate purchaser refusing a tempting additional sum to part with her. This bird (a yellow) had one of the longest and best chains I have seen for years.

If fanciers will have the mane and rose, then they must do without the chain, one of the great beauties and distinctive characteristics of the Jacobin. The chain must necessarily be suddenly stopped short to create a perfect rose, and if only gradually shortened the rose must then necessarily be oblong and imperfect. The mane and rose in the Jacobin are recent innovations. They suit the present taste, and go down with some judges at our shows, but that is no proof that they are the true characteristics which the bird possessed while in the hands of the earlier fanciers. Since the old Spitalfields weavers (the introducers of this and most of our fancy Pigeons) died out, this bird has gradually degenerated, gradually acquiring the Tumbler form of body, and unless some spirit is shown in introducing more original blood the true bird will be lost altogether.

The same style of degeneracy is going on in other birds. The so-called English Owl is but a cross-bred bird, and until the true (African) bird was brought prominently forward young fanciers would not believe what they now do. Many of these cross-bred birds are little better than fliers or racing birds; indeed, the latter is indebted much to the cross with the Owl for its high soaring and speed in flight.

The Barb is also going in the same way. The heads of many of them are wonderful, I should say improved, but it is no longer the Barb, it is a Tumbler with a Barb's head; with the exception of the head the other distinctive characteristics of the bird are lost. A friend of mine in Kilmarnock lately purchased what London fanciers would call a tidy bird. It was one of the new type. By-and-by it was allowed its liberty, and proved such an adept at tumbling that its possessor in disgust wrung its neck. This just shows the line the fancy is taking. What will stir us up? Oh, for the ghost of an old Spitalfields fancier!

—JAMES HUTCH.

MORPETH SHOW OF POULTRY, &c.

THE second annual Show was held at Morpeth on Saturday last in the Corn Exchange, Fothergill's pens being used for the accommodation of the birds. The prize money was small as compared with that of some other shows in the district. The light was not good in some cases, and the Gold-spangled Hamburgs being placed very high and with the back to a very strong light were exceeding difficult to judge, but the most was made of the space at disposal.

Cockins were a very good lot, the winners being Buffs, which also took the cup for the best pen in the Show. *Brahmas* were good, the first about correct; the second losing only in the cock being too grey on the fluff. *Spanish* were a fair lot; the first contained a cock with a grand face and drop. *Hamburgs* were not first-rate, though there were some good pens, the Silver-spangles, Pencils, and Gold-pencils being best. In *Game* the entries were very good: the first class, that for Reds, was one of the best ever seen in the north of England. The first and second were Brown Reds, and extra second Black Reds. In the next class Duckwings won, and these were also very good. In single cocks first was a Duckwing and second a Brown Red, but many birds shown were not fit for the show pen. In single hens first was a Brown and second Black Red, both most perfect in colour and marking; the first one of the neatest birds of this breed we have seen of late. *Game Bantams*.—Reds were very good, the medal for the best pen in the Show being awarded to the first pen. In the Variety class Duckwings won, and these were also well shown and of good quality. In single cocks two grand Black Reds won, but many of the others were far too large in tail. Some capital Blacks were to the front in the next class.

Single cocks any other variety were first a Brahma and second a Black Bantam; and in single hens first was also a Brahma and second a Dorking. Ducks were of no note except the first-prize Rouens and second Black East Indian, both shown in the same class.

In Pigeons the entries were not large, Mr. Wilson winning most of the prizes, the most noteworthy classes being Nuns, Magpies, and Dragons.

Cage Birds formed a fine feature of the Show, and there were many good specimens. In Norwich first was a Jonque and second Mealy, these winning more by condition than aught else. In Marked birds of any variety first was a Jonque Norwich with even wing and neat eye-pencilling, the second being a very good Yorkshire. In Mules the whole were from Goldfinch; first an almost clear Buff, second a four-pointed Buff, and very highly commended a rich dark Jonque. Common Canaries were very good; but two Norwich birds were shown and had to be passed over, the winners being straight clear birds. In the Variety class were some grand birds, Belgians, for which no provision had been made, predominating. The first was a handsome specimen in the best order possible, and second a Golden Lizard. The whole of the class was highly commended.

Cats had three classes provided, the first for toms, in which a very good Silver Tabby was first and medal; the second a Persian not so good in colour—a dusky Blue. In shes first was a Tortoiseshell-and-white, a most wonderful Cat if only nine months old as stated, and second a blue Tabby. In the next class Lion was first, and a Tabby almost equal second.

POULTRY.—Cochins.—Cup, 1, and 2, G. H. Procter, Durham. *who*, J. Hize, J. Doodis, J. Douglas, W. Swann. BRAHMA POOTRAS.—1, G. A. Anderson. 2, W. Swann. DORINGS.—1, W. Swann. SPANISH.—1, H. Dale. 2, J. Richardson. *who*, T. Oliver. HAMBURGERS.—Golden-pencilled.—1, G. Smith. 2, J. Morton. *who*, J. Engles. Silver-pencilled.—1, G. Alderson. 2, G. Deatner. *who*, J. Curry, W. Johnson. Golden-pencilled.—1, A. Stephenson. 2, T. & J. Kidson. Silver-pencilled.—1, J. Patterson. 2, J. Morton. GAME.—Black or Broken Reds.—2, W. Youngusband. Extra 2, J. Nelson. Any other variety.—1, J. Nelson. 2, F. Stamford. Any variety.—Cock.—1, A. Smith & Hovey. 2, W. H. Adams. *who*, W. Youngusband. Hen.—1, W. Youngusband. 2, J. Nelson. *who*, J. Wilson. GAME BANTAMS.—Black or Broken Reds.—1, Medal. 2, J. Nelson. Any variety.—1, T. Bawley. 2, J. Douglas. Any variety.—Cock.—1, G. Bell. 2, G. Dowie. Hen.—1, J. Nelson. 2, J. Short. BANTAMS.—Any variety except Game.—1, and *who*, R. H. Ashton. 2, W. Newbiggan. Cock.—1, G. A. Anderson. 2, R. H. Ashton. Hen.—1, T. Oliver. Extra 1, R. Parsons. 2, W. Swann. *who*, A. Cummings. SELLING CLASS.—1, T. Oliver. 2, J. Hine. DUCKS.—Any variety.—1, J. Nelson. 2, F. E. Schofield.

PIGEONS.—Pouter.—Cock.—1, G. Deatner. 2, P. Wilson. CARRIERS.—Cock.—1, P. Wilson. 2, D. Bost. FANTAILS.—Cock or Hen.—1, J. Duffield. 2, P. Wilson. TURKISH.—Cock or Hen.—1, J. Carrill. 2, P. Wilson. ANTWERPS.—Cock or Hen.—1, W. Hutchinson. 2, Davison & Pattison. NUNS.—Cock or Hen.—1, T. Wilkinson. 2, P. Wilson. MAGPIES.—Cock or Hen.—1, J. Carrill. 2, P. Wilson. DRAGONS.—Cock or Hen.—1, J. G. Patterson. 2, G. A. J. Pearson. ANY OTHER VARIETY.—Cock or Hen.—1, T. Wilkinson. 2, W. L. Clark. SELLING CLASS.—Cock.—1, J. Duffield. 2, T. F. Beckham. 3, T. F. Beckham.

CAGE BIRDS.—Yellow or Buff.—Cock or Hen.—1 and 2, W. Potts. MARKED CANARY.—Cock or Hen.—1, J. Spencer. 2, and *who*, T. Darling. MULES.—Cock or Hen.—1, J. Purdy. 2, J. Spencer. COMMON CANARY.—Buff or Yellow.—Cock or Hen.—1, J. Smith. 2, Hobbler & Jobling. ANY OTHER VARIETY.—Cock or Hen.—1, J. Robinson. 2, J. Spencer. SELLING CLASS.—Cock or Hen.—1, J. Spencer. 2, Hobbler & Jobling. *who*, J. Robinson, Hobbler & Jobling. CATS.—Toms.—1, T. Marshall. 2, Miss B. C. Brew. QUEENS.—1, Miss Taylor. 2, Miss M. Nicol. ANY OTHER VARIETY.—1, E. Baxton. 2, Mrs. Brown.

JUDGES.—Poultry, Cage Birds, and Cats: Mr. E. Hutton, Pudsey, Leeds. Pigeons: Mr. J. Dye, Hexham, Northumberland.

CAYENNE AND CRUELTY TO CANARIES.

I WAS pleased to notice in the papers some short time back that attention had been drawn to the fact of birds being plucked of their feathers for the purpose of ornamenting the head-dresses of the fair sex. Thus it appears that fashion is encouraged at the expense of a certain amount of cruelty. I believe it was the Baroness Burdett Coutts who recently remarked upon the cruel practice adopted, which, if only partly practised to the extent carried out by Canary fanciers, is barbarous in the extreme. In the Canary world fashion gives the hottest-coloured birds the best chances of winning laurels for their owners; but before such birds (mostly yearlings) can attain the points desired, they have to undergo a certain process more in accordance with the customs of uncivilised beings than those belonging to a humane country.

It is against the plucking of the birds' feathers I make my standpoint, and not in particular against the use of cayenne pepper. Science and improvement respecting the different breeds of the Canary are very well in their ways; but since the knowledge has been brought to bear of imparting high colour to birds during their moult through the use of cayenne pepper, nothing short of actual cruelty in the majority of cases results therefrom. It is a too-well-known fact that before young birds can be made high-coloured in their entire plumage they undergo the torturing ordeal of having the whole of their flights and tail feathers extracted before the new feathers can possess uniformity of high colour with the cayenne. Besides the plucking of the flights and tails, even the smaller shoulder covert feathers are extracted, and the new feathers have to be grown during the partaking of the pepper diet, before the birds are considered to be in show trim. It is mainly the Norwich breeds of Canary which fall victims to the plucking practice. There are some breeds which entirely escape the plucking process for the sake

of preserving the natural colour of their feathers whilst they are yearlings.

No doubt those who practise the plucking of birds' feathers would deem it cruel if they were ruthlessly laid hold of and underwent the torture of having their teeth drawn, or the hairs of their whiskers and eyebrows extracted two or three at the time. Canaries, although but diminutive specimens of the animal creation, are equally sensitive of pain. For humanity sake I protest against the present system, and would rather see the fancy go back to the days before the pepper was used and sacrifice all desire for such high colour than encourage cruelty. If art be used to improve and beautify nature, acts of torture should not be winked at. But I do not say with Sir Oracle,

"When I ope my mouth let no dogs bark."

I do not doubt for one moment but that there are many good fanciers, who favour the pepper system of feeding, humane enough to at once abolish the torture of plucking if means can be devised to exhibit birds different to the system adopted at the present period. If Nature deems it necessary to cast off the nest or body feathers only, why should not birds be exhibited with their natural-coloured (unpeppered-coloured) wings and tails? Some such conditions to be specified in the schedules would suffice; and to further carry out this matter I would suggest that all yearling Canaries which have been subjected to the plucking (so as to enhance the colour in the flights and tails) should be disqualified. With inducements issued to exhibitors, and instructions to the judges how to act, a check would be given to the objectionable and cruel plucking system. A two-year-old bird would be better able to undergo the pepper process than a young bird, and it would be wisdom if fanciers would study this matter. In most instances they are not only larger and finer birds, being well set in their muscular developments, and of more mature constitutions, but pass through their natural process of moulting without being plucked.

I have known of instances when birds of good form and quality of feather have fallen into the hands of fanciers after such birds had wholly or partly passed through the moult without the use of cayenne pepper. The remarks of the purchasers are generally, "I'll make the bird a good 'un." The birds are then periodically stripped of their feathers from heads to tails, even to the smallest of their feathers around their beaks, eyes, and ears; and so painful and exhaustive do the birds become under the severe operations, that in many instances they have fainted and been rendered entirely prostrate in the hands of the cruel operators. Not unfrequently the bones of the wings are broken through the operators' clumsy handling, and deaths often ensue.

Surely it cannot be the wish of the Canary fanciers of the present day to place themselves upon a footing with those monsters of the dark ages who deemed it desirable to destroy the eyesight of their cage pets with a burning wire for the purpose of learning them to sing at night-time as well as day; or of the alighting of Starlings' tongues to make them talk. No, I cannot believe this to be the aim of fanciers, especially as they pride themselves upon keeping up a rule in bird societies—namely, that of "improving the breed of the Canary."

From past experience I believe the breed can be the better improved without the aid of cayenne pepper at all. I look upon colour, as it is produced with pepper, as a minor point compared to breed. It has been proved beyond all doubt that the use of cayenne pepper to all breeds of the Canary will very considerably heighten the colour, let the natural hue of the breed be however pale it may. During my journeyings to several exhibitions of the past season I was struck with the appearance of some Yorkshire and Plain-heads, which were almost as deep in colour as any Norwich birds I ever saw.—GEO. J. BARNESBY.

BEE LIFE IN WINTER.

At the last Crystal Palace Bee Show I exhibited a small stock of Ligurian bees in one of Marriott's unicom observatory hives, and the subsequent study of this little colony has revealed some of the vicissitudes of bee life and death which may prove interesting to relate. The hive was constructed for a special purpose; and instead of a large pane of glass, each side has twenty-five little windows opening on hinges, so that any portion of the comb is accessible to the touch as well as to the sight, the only inconvenience being that when the bees are actively working they take immense pains to propolise every joint, so that sometimes the windows are difficult to open.

The hive was stocked last May with an artificial swarm of black bees, which was afterwards, by exchange of queens, ligurized. The new queen was released in the hive May 18th at sunset, having been caged therein twenty-four hours; and on the morning of June 8th the first Ligurian workers emerged from their cocoons. Eighteen days and a half only could have elapsed after the eggs were laid. On July 20th all black bees were gone and replaced by young Ligurians. The wet weather then very much interfered with the prosperity of my little colony, added to which I was so much engaged with my secretarial duties to the British Bee-keepers' Association, and no time

to attend to the observatory hive, that on examining them in the middle of August I found few bees and no stores, so I now liberally supplied syrup and our friend Mr. Pettigrew's much-despised artificial pollen. Rare fun was it to see the little fellows awakened to renewed activity; one set loading themselves with the meal, another storing the syrup, and a third busy in attendance on the queen and her rapidly-becoming-numerous progeny, so that by the Show time I had the hive fairly full again, and I hoped it would stand a fair chance with so many young bees to winter safely. The hive was placed in a window, permitting the bees egress through the window frame to the outer world, and all went well until the cold weather of early December set in, when the number of bees so rapidly diminished that I became convinced that unless the state of affairs was remedied, the advent of Christmas would find the colony among the things that were. Close observation soon told me that a fine morning tempted the bees abroad, but few returned; and numbers could, by diligent search, be found motionless on surrounding objects evidently chilled, from which they never recovered. The bees on December 9th were reduced to about a pint, when I determined to close the outer entrance and try and save those left. A thermometer being placed within the hive away from the cluster at ten o'clock A.M., when I was enabled to look at it, never showed lower than 44° nor higher than 60° all through the winter; but 44° to 50° was quite low enough to chill many bees to insensibility. Each morning on the floor of the hive bees were found apparently dead, which I had carefully gathered up, their number with temperature registered, and the fire being lit, the comatose insects were placed in a chip box on the mantelpiece. It astonished me to find how large a proportion revived, especially in the early winter. I have the table before me, from which I give the following summary:—

	Chilled.	Revived.	Dead.
December (23 days)	175	141	34
January	255	193	68
February	108	56	47
March	188	114	74
	726	504	318

These statistics are highly suggestive of the fearful mortality which must take place in winter from the stocks in the garden when the bees venture abroad, and to test this I several times gathered a few apparently dead bees from the floor-boards of the hives in the garden, and found on the like application of warmth a large per-centage revived. But what astonished me still more was the inability of my observation bees when absent from their hive to bear even a temperature of 50° to 55°. In order not to deprive them of exercise, when the sun shone or the fire had warmed the room I opened some of the little windows and gave the bees their liberty. At first every bee flew to the window, fluttering against the glass until exhausted; but they very quickly became educated to their altered circumstances, and would happily take flight about the room and find their way home; but woe betide those unlucky bees that happened to get into a draught from the window or door; down they dropped as if they had inhaled chloroform, and every day at shutting-up time there was plenty of work to gather up the helpless.

It is astonishing how tame and harmless these bees became. My son and I handled them daily, taking all manner of liberties with them, which they never resented. At first when a window was opened they seemed inclined to show fight, but very soon they gave no sign of excitement or astonishment whatever. I had great hopes that the warmth of the room would induce early breeding, but January and February passed without any larvae making their appearance. The bee bread of the hive had all been consumed, and, according to the savants, larvae could not be reared without some. The queen laid eggs daily, but next day they surely disappeared. Meal was supplied, but no bee would touch it, and March came and went without an egg hatching. The Ligurian queen was evidently prolific, and I thought it a pity to waste her time when she might be at the head of a strong black stock I was anxious to ligurianise. so I determined to make an exchange, which I did, carefully caging both queens. Alas! now comes the catastrophe. On releasing the black queen the Ligurians fiercely attacked her. She was rescued and again caged, and released next day as before, immediately encased, once more secured, and next day found dead in the cage. Now for the Ligurian queen caged with the black stock in the garden. I released her after two days' confinement, and immediately to my surprise and disgust she flew right away and was lost; so now my two colonies are orphaned, and will have to wait for the coming of the drones before the royal larvae the stronger colony is now rearing from Ligurian eggs supplied to them can occupy with advantage the vacant thrones, before which time I fear my little lot of Ligurians will be very much dwindled.

An observatory hive such as I have been using is capable of affording an endless source of amusement and scientific instruction, but to keep the inhabitants in health requires unceasing

attention and care—more, indeed, than most persons can afford to give.—JOHN HUNTER, *Eaton Rise, Ealing.*

OUR LETTER BOX.

SPANISH COCK'S FACE EXCESSIVE (*A Subscriber*).—There is only one treatment, and that is not without its disadvantages. It is to put two small strips of sticking or adhesive plaster on the skin, compelling enough of the eye to keep open to enable the bird to see. There is no cure for it, but relief is sometimes afforded by frequent use of a strong solution of alum in water. Vinegar may be used for the same purpose.

EGGS FLAVOURED BY GARLIC (*L. O.*).—We have no doubt the wild garlic will impart its flavour to the eggs, and probably the flesh of the poultry. It has been often tried, and the result has always been the same. Fowls are very fond of malt dust; when fed on it the eggs after a few days taste strongly of malt. The celebrated canvas-backed Ducks are believed to get their quaintness and delicate flavour from the wild celery that grows on the banks of the American river where they are killed.

AUSTRALIAN ZEBRA PARAKEETS (*E. F. L.*).—It is unnatural for your birds to be "continually moulted." The cause may be partly attributable to the varied temperature, especially if the birds have been kept where artificial heat is produced either from fire or gas. Rape and hemp seeds are both very heating to the birds' system, and you must discontinue the free use of it during the summer months. Continue with canary and millet.

VARNISHING OR STAINING HONEY BOXES (*F. J.*).—If your boxes are exposed to the weather we should paint them. Varnish will not stand the wear and tear of sun and rain, and staining is useless. But if your boxes are well protected from the weather we should let them be, especially so near the honey and swarming season. Bees dislike strong smells about their hives, inside or outside.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					RAIN.
	Barom. at sea level.	Hygrometer.	Therm. of air at 5 feet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.	Radiation Temperature.	In sun.	On grass.	In.	
1876.											
April.		Dry.	Wet.			Max.	Min.				
We. 19	29.911	48.1	48.3	S.E.	44.8	54.9	44.3	87.9	89.1	0.168	
Thurs. 20	29.963	52.4	48.3	S.S.W.	44.8	58.1	44.3	100.3	88.5	—	
Fri. 21	29.849	52.1	48.8	S.W.	42.3	57.5	44.8	90.7	89.6	—	
Sat. 22	29.855	52.8	50.0	S.W.	47.0	63.2	44.3	117.2	87.9	—	
Sun. 23	29.923	49.8	47.3	S.	48.3	60.4	48.1	101.3	88.7	—	
Mo. 24	30.048	55.0	50.4	S.	48.8	65.1	46.3	115.3	89.6	0.014	
Tu. 25	30.089	54.7	49.0	S.W.	49.6	61.9	46.1	112.4	40.7	—	
Means	29.968	52.1	48.8		47.0	60.0	44.9	104.4	89.1	0.177	

REMARKS.

19th.—A very showery day, the rain at times, and the atmosphere dark.
20th.—Rain in early morning, but fine soon after 9 A.M., and fair all day, but not bright, and the wind rising gradually all day.
21st.—Rather cloudy at times, but a very pleasant day, especially the after-part.
22nd.—Fine morning; a warm pleasant day throughout.
23rd.—Fair but cloudy, and very dark between 9 and 10 A.M., then clearing off, and followed by a very fine day and night.
24th.—Very fine early, but dull about 11 A.M.; fine after; a very slight shower at 7 P.M., and a cloudy night.
25th.—Beautifully fine early, dull for two or three hours, sharp but short shower about 11 A.M., and very fine after.
A very pleasant week—sunny, little rain, although southerly wind.—G. J. SYMONS.

COVENT GARDEN MARKET.—APRIL 26.

BUSINESS somewhat improved, and a good supply of all classes of goods. A large quantity of St. Michael Pines have again arrived, but of inferior quality, and show evident signs of their season being nearly over.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1	6 to 5	0	Peaches.....	doz. 0 0 to 0 0
Cheshnuts.....	bushel 0 0	0 0	0	Pears, kitchen.....	doz. 0 0
Filberts, Cobs.....	lb. 0 0	1 0	0	Dessert.....	doz. 8 0
Grapes, hothouse.....	lb. 6 0	18 0	0	Pine Apples.....	lb. 1 0
Lemons.....	doz. 6 0	12 0	0	Strawberries.....	doz. 0 0
Melons.....	each 0 0	0 0	0	Walnuts.....	doz. 1 0
Oranges.....	doz. 6 0	12 0	0	ditto.....	bushel 4 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	dozen 4 0	6 0	0	Leeks.....	bunch 0 4 to 0 6
Asparagus.....	doz. 10 0	10 0	0	Mushrooms.....	pottle 1 0
French.....	doz. 6 0	17 0	0	Mustard & Cress.....	punnet 0 2
Herbs, Kidney.....	doz. 1 0	0 0	0	Onions.....	bushel 2 0
Beet, Red.....	dozen 1 6	8 0	0	pickling.....	quart 0 6
Broccoli.....	bunch 0 9	1 6	0	Parsley.....	doz. bunches 2 0
Brussels Sprouts.....	doz. 0 0	0 0	0	Parasleys.....	dozen 0 0
Cabbage.....	dozen 1 0	2 0	0	Peas.....	quart 4 0
Carrots.....	bunch 0 4	8 0	0	Potatoes.....	bushel 2 6
Cauliflowers.....	doz. 1 6	2 0	0	Kidney.....	lb. 3 0
Celery.....	bunch 1 6	2 0	0	New.....	do. 0 6
Coleworts.....	doz. bunches 2 0	4 0	0	Radishes.....	do. 0 6
Cucumbers.....	each 0 4	1 6	0	Rhubarb.....	bunch 0 6
Endive.....	dozen 1 0	2 0	0	Salsify.....	bunch 0 9
Fennel.....	bunch 0 8	0 0	0	Scorzonera.....	bunch 1 0
Garlic.....	lb. 0 6	0 0	0	Seakale.....	basket 1 6
Horseradish.....	doz. 0 0	0 0	0	Shallots.....	lb. 0 8
Lettuce.....	bunch 4 0	0 0	0	Spinach.....	bushel 4 6
Letts.....	dozen 0 6	1 0	0	Tomatoes.....	doz. 1 0
French Cabbage.....	1 6	2 6	0	Turnips.....	bunch 0 4
				Vegetable Marrows.....	0 0

WEEKLY CALENDAR.

Day of Month	Day of Week.	MAY 4—10, 1876.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.	
4	TH	Royal Society at 8.30 P.M.	62.4	58.5	50.5	4 27	7 26	8 15	8 0	10	8 24	135
5	F	Alexandra Palace Show. Royal Institution at 8 P.M.	62.9	59.0	50.9	4 25	7 27	4 81	8 11	11	8 29	136
6	S		63.8	58.5	50.4	4 24	7 29	5 47	8 22	12	8 34	137
7	SUN	8 SUNDAY AFTER EASTER.	68.0	59.4	49.8	4 22	7 31	7 5	8 34	13	8 38	138
8	M	Royal Geographical Society at 8.30 P.M.	64.8	40.7	52.7	4 20	7 32	8 22	8 49	14	8 43	139
9	TU	Royal Medical and Chirurgical Society at 8.30 P.M.	68.0	41.8	54.1	4 19	7 33	9 37	4 8	15	8 45	140
10	W	Royal Aquarium—Second Spring Show. Glasgow Summer Show.	66.7	41.0	53.4	4 17	7 35	10 45	4 35	16	8 48	141

From observations taken near London during forty-three years, the average day temperature of the week is 64.1°; and its night temperature 40.0°.

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STORING SOIL FOR VINE BORDERS.



OUR correspondent "A NORTHERN GARDENER," who discourses interestingly on this subject, overlooks, I think, one or two important considerations in recommending the turf to be gathered in summer in order to secure it in a warm condition.

During the last five and twenty years I have, as master or man, had, perhaps, as much experience in soil-storing and in making Vine and fruit-tree borders as falls to the lot of most gardeners. Where I was a learner—the place being extensive and the expenditure ungrudged—good loam was used for many purposes, and hundreds of tons were stored annually. The gardener believed in having it in all degrees of mellowness, and I daresay there were heaps of soil always to be found in the soil-yard from one to five years old at least, with the fibre, in the older heaps, entirely gone of course, and the soil as fine as meal—a waste of material I afterwards found out. That was twenty years ago, and since then I do not think a year has passed in which I have not been engaged in border-making in some capacity or other, and I have used the soil at all seasons of the year and of different ages, from the newly-obtained turf in a green state up to the age of two years. Rightly or wrongly, therefore, I may be supposed to have formed some opinions of my own on the subject, and they are these: First, that summer is the worst period in the whole year to store turf; and secondly, that so far as the temperature of the border is concerned after filling-in it is of no consequence when the soil is procured provided it is not used in a frozen state, which is like storing ice, and a very different thing from using it when it is only cold.

I object to summer storage because, as gardeners cannot always choose either their time or weather for such work, the soil is apt to be stored in a dry state, and whether stacked in heaps or put into the borders at once it is almost impossible afterwards to soak it thoroughly. I have seen this so often exemplified and with such troublesome consequences as to dispel all doubts from my mind on the subject, and my advice would be to get the turf in when it was moist, or even wet, and store it in sheds or in ridges out of doors. It will become drier by draining, but it will not become wetter, and will always be in good condition for any purpose. Unless it is that the outer sods hold the water in suspension like a sponge and give it off again by evaporation in dry weather, it has been a puzzle to me why stacked turf, or even loose heaps, were so long in becoming soaked by the rains. For the last two years we have been leading turf at intervals, turf put to one side in a loose ridge in making a coal-pit tramway through part of the estate, and I have been surprised to find the inner or bottom sods in the heaps almost as dry as when they were taken off, and of course unfit for our purpose.

Now as regards the temperature of the soil. Would "A NORTHERN GARDENER" be surprised to hear that I

have taken up turf when it was at or about a temperature of 85°, or lower, chopped it up and put it in the border in that condition, and not long afterwards had the bed at a temperature of 75° or 80° without artificial aid, except that it was an inside border? and had it been outside, a tarpaulin or a covering of straw or dry litter would have served the same purpose as a roof. The reason of this rise in the temperature will be apparent, I daresay, to most of your readers: it is due simply to fermentation, which always takes place when chopped turf is laid up in a heap or bed, and is just in proportion to the amount of vegetable matter it contains, and is the first step in that process of decomposition which sets plant-food at liberty, and makes fibry turf valuable for Vine borders or anything else. Knowing this much, I have never cared a straw what the temperature of the soil was when wheeled in, provided it was in good condition otherwise, and I certainly never knew any mishap to occur to the Vines through deficient bottom heat. There is just as much danger that the heat may be sometimes too great. I once had an inside border made up with fresh turf to which had been added a certain proportion of fresh horse droppings, which promoted fermentation so much that the temperature of the border rose to 90° and remained at that figure for a long time.—VINE-GROWER.

ROSE STOCKS.

I HAVE often lately felt very much inclined to say a few words with respect to the question raised by my friend Mr. Camm relative to Briar v. Manetti or Manetti v. Briar, but Church work during Lent and Holy Week has prevented my being able to find time. At the risk of repeating what I have before said at different times in the *Journal of Horticulture*, I venture to endorse all, or at all events nearly all, that Mr. Camm has said. Ever since the year 1860 I have been a deadly foe to the Briar. That year I had about one hundred good standards in different parts of my garden, and about the same, or rather more, Roses on the Manetti. I cannot at this distance of time venture to state the exact number, but I do very distinctly remember this, that out of my standards only two survived till the spring of 1861, and those were so crippled that they eventually succumbed. I did not lose a single plant on the Manetti stock, and though I do not think any exactly remain in the same position at present, as I have made so many alterations since, yet I have several of the old Roses on the Manetti still alive now and some Roses on their own roots—Gloire de Dijon and Général Jacqueminot in different situations, which are giving me as good Roses now as they did previously to their being transplanted in 1861.

Never since 1860 have I attempted to grow any more standards. I had no great love for them before. As far back as 1852 I had begun to plant Roses on Manetti stock in Nottinghamshire, and every year up to 1860 I had more and more decided in favour of the Manetti. Still, in old days it was difficult to obtain good plants on the Manetti; only a few nurserymen, as Mr. Cranston at

Hereford, and Mr. Harrison of Darlington, and one or two others had really taken the Manetti stock up or given it a fair trial, so one perforce had to buy some on the Briar. But 1860 was a fauer—or rather I ought, I believe, to say Christmas eve of 1859, when the thermometer about here could record zero, and the mercury retired into the bulb and refused to appear. One of my minimum bulbs could register to -5° , and this a spirit thermometer recorded -4° in the morning; but as it was -8° at eight o'clock Christmas day I am inclined to think it was really lower. Near here one record four miles off was -8° , another -10° , and Mr. May of Bedale assured me his minimum, a good glass he depended on, registered -12° . I know in the Dukeries in Notts and along the valley of the Trent the records varied from zero to -10° . However, this is somewhat of a digression and repeating a twice-told tale, but the moral of it—if frost can be said to have a moral—was this: that Roses on standards had their heads exposed to all the severity of the frost without protection of snow or mother earth were as a rule entirely killed—not only the Rose, but the stem of the Briar as well. Some persons have argued in favour of the hardness of the Briar as being an indigenous plant, but I can assure them in every hedgerow about here the old Briar—yes, and the young ones too, were killed down to the ground, so that in the summer of 1860 there was not a Dog Rose to be seen in the hedges; while a lot of old Manetti stocks of mine never suffered apparently at all, though they had shoots 4 or 5 feet long unpruned and untouched. The argument that because a tree, or plant, or shrub is indigenous that it is therefore hardy is, in my mind, quite fallacious. Who has not seen a healthy bed of Nettles cut-down by a spring frost, while a bed of seedling Pansies or Auriculas has come off unscathed? Even the lordly Oak was killed by this same frost, and in the neighbourhood of Howsham, near the river Derwent, branches of large Oak trees two and three hundred years old split with a sound like the firing of distant guns.

Having been, as a Yorkshireman would say, very full against standards even before 1859–60–winter, my experience of that season made me determined not only never to plant another myself, but never to advise others to do so, and never to bud another Briar. I had a dozen standard Roses once sent me as a present from abroad, and I have had, when ordering Roses on Manetti, a few half-standard Tea and Noisettes sent me on dwarf Briar stocks; but though they were planted in the same beds with those on Manetti and have had the same treatment I do not think I have a single Rose alive now on even a dwarf Briar stock. I certainly have a dozen doing well, especially three or four so-called Teas on the seedling Briar, but then I have buried the junction, and I believe they have made their own roots; and the only crown, which is on a level with the ground, is pushing up a healthy crop of suckers of the true Dog-Rose type, several of which I had to cut off last year, and some half-dozen of which I saw appearing again yesterday. I said so-called Tea Roses, for I do not assent to Gloire de Dijon, Belle Lyonnaise, and that type being called Teas; the wood, growth, and young shoots are entirely distinct from the true Teas and are of the Bourbon type, with possibly sufficient Tea blood to give them their scent and second-blooming qualities; but compare Gloire de Dijon with Souvenir d'un Ami, or Niphetos, or Adam, and then compare Maréchal Niel (a Tea-scented Noisette) with the old Rosa odorata citriodora, and it will be found that the Tea-scented Noisettes are nearer to the true Teas than the Gloire de Dijon and its congeners. I am inclined to think, then, that why seedling Briars are such good stocks for some of the so-called Teas is that they eventually get established on their own roots. And here I seem not to be in accord with Mr. Camm, who strongly advises no one to trouble themselves about Roses on: heir own roots. But the fact is there are some of the stronger-growing Roses—especially such as Gloire de Dijon, Céline Forestier, Général Jacqueminot, John Hopper, and some of the older Bourbons, Noisettes, &c.—which if once established on their own roots will make far finer growth and bloom from their own roots than from any stock; but, then, nothing but trial and selection, except perhaps observation of the natural habit of wood and growth, will enable one to judge which sorts will do on their own roots, and it takes far longer to establish them. To try and grow such plants as Marie Baumann or Louis Van Houtte, and Mdle. Bonnefais on their own roots would be simply futile—so much waste labour; so that I quite agree with our enthusiastic rosarian when he says, "Don't burn your fingers and waste your time over growing Roses from cuttings on their

own roots unless you have plenty of natural discretion and observation, and have, moreover, a good, rich, light loam, not too heavy, not again too blow-away; but if you have either a heavy clay or a soil like that of Monkton Wyld, a sample which was sent some two years ago by the Editors to analyse, I say advisedly, Don't fash yourself." I give Mr. Camm every credit after the sample of soil which I had then submitted to me for the great success he has had, but I am not surprised that the Briar has proved a broken reed.

Now I know some rosarian from a real heavy clay or an unctuous loam, who has taken pains to get good clean Briars with a fair modicum of root, and has budded them himself and duly attended to them, will say, "All nonsense: nothing like a good Briar." (By the way, ought it to be Briar or Briar?) But then all soils are not heavy clay or unctuous loam; besides, most persons think more of having good Roses to last when planted than of the first blooms from a quarter of maiden Briars. Granted under certain very favourable conditions of soil, climate—autumn, winter, and spring—when you have caught your season and carefully budded a quarter of carefully selected Dog Roses, not real old stumps which would do for nur-and-spell, but good, vigorous, young plants carefully transplanted, not cut out of hedgerows with a narrow sharp draining tool as I have seen them. Granted, as I say, that under very favourable conditions the first-year blooms from a quarter of maiden Briars will repay a great deal of labour and many disappointments, yet for general purposes the Dog Rose is so uncertain a stock that I hope before long we shall see no more mop-shaped Roses on long poles.

I have before now given my reasons why the Roses on hedgerow Briars must suffer. Firstly, the labourers who take them out of the hedgerows, and have so much the dozen or hundred for them, take no pains about pulling them up. Next, when taken up they are often thrown in heaps together in a shed or put in by the heels till sufficient in number to make a deal with the nearest nurserymen. I do not, of course, mean to say that all nurserymen procure their standards in this way. Then when they are planted in rows in the nurseries a certain proportion—I won't say how many, but I believe I should not be far wrong if I said twenty per cent.—die, or rather never live. The others push their shoots, some pretty strongly, others feebly, but every one that lives is budded and has to take its chance. A certain proportion of the buds fail, and the stocks die away after pushing their first growth. All that live and on which the buds grow are sent out as standard Roses, or dwarfs or half-standards as the case may be, according to the original height of the Briar or the height at which they broke; so two years after they were pulled out of the hedgerows and planted in the nurseries they are again removed from their nursery quarters and sent out to the British public. This second transplanting either kills or cripples half that survive the previous processes and reach the hands of Rose-loving John Bull. And then comes another point. Ordinary garden soil, such as sandy or light loam, or peaty soil or leaf soil, does not suit the Briar; it requires something more heavy and tenacious. Good farmyard (shall I write the word?) muck with house sewage, &c., may make a poor soil fitter, but it won't turn a brashy, sandy, or gravelly soil into a fit home for a Briar.

This is rather like a sailor's yarn, somewhat long and spun out. But I have yet another indictment against the Briar as a stock, one I have made before some time ago, but which I venture to repeat, and that is that it is contrary to the nature of the Rose to prune it to the form which it is almost necessary to do to keep it as a mop-headed standard.

A Dog Rose naturally recuperates itself each year from the root; its nature, its habit, is to throw up suckers. Look at a good established wild Rose in a hedge—you will find every year it pushes up strong shoots from its very base, making shoots each year stronger than the year before, till it begins to be past the age of vigour and begins to decline towards the period of decrepitude. This, however, is its habit, and standards are always trying to throw-up suckers, and Rose-growers have to be perpetually on the guard against them. Pruning to a symmetrical head may give an equal distribution of blooms over the plant—a good show, in short, of garden Roses for distant effect; but rarely, if ever, will a really good exhibition bloom be cut from a standard, half-standard, or dwarf after the third season.

Roses on seedling Briars are not liable to the same objections. First, because the roots are cared for—are not mutilated at transplanting, and are young and vigorous. Secondly, the

Roses are budded low down, and when transplanted are put into the ground either at the level of the union of scion and stock, or buried deeper, and they can then get established on their own roots as well, and a better system, too, of pruning can be pursued, but I fear this even will not do away with the danger of Dog Rose suckers. Here is the great advantage the Manetti has over the Dog Rose, that it never has any root-suckers. There may be eyes left in cuttings of Manetti, and careless Rose-growers may plant the Manetti Roses so shallow as to allow the Manetti to be above ground; but if good Roses are planted on Manetti and planted sufficiently deep, there need be no difficulty about so-called suckers, otherwise Manetti shoots. I don't grow Roses largely—only about seven or eight hundred—but I can safely say I don't have to eradicate a Manetti shoot on more than eight or ten plants in the year.

Then, again, by deep planting the Roses are protected by the soil at the union between scion and stock, and, however severe the winter is, are never killed by frost below the ground. Only as recently as December 31st, 1874, I had a great proportion of Roses on Manetti killed to the ground line, but they all made fine shoots and vigorous growth last year. This system, too, enables one to encourage young growth from the base and to cut away old wood. I cut away every particle of wood from the base more than two years old, and trust only to the younger growth, which under this treatment invariably springs up from the base every year. I do not shorten the stronger young shoots too severely, as I often am inclined to think that by too close pruning of strong well-matured shoots you may cut off some of the finest buds. I do not think under this system of pruning, with proper winter mulching, never allowing a spade or a fork to touch your beds—nothing but a hoe and a rake, that Roses will deteriorate on Manetti even after ten or twelve years; and though I am not an exhibitor, yet having had a fair experience as judge at most of the leading Rose shows, I am sure I can cut as fine Roses off established cut-back Roses on Manetti as the generality of Roses shown even by our leading nurserymen and amateurs, though no doubt where whole boxes can be cut off selected quarters of from fifty thousand to a hundred thousand maidens on Manetti, no cut-back Roses or old-established plants would stand a chance.

Casualties sometimes teach one a lesson. I left some *La France* last year a long time without pruning, and they pushed such fine shoots I determined only to thin-out and not shorten, and never saw such fine *La France* anywhere last year as those. This year (April 21st) I have not yet finished pruning Roses. What will Mr. Camm say to this? And I am glad I have not, as the spring frosts and March winds have injured every fully-developed bud, and I shall have to trust to May growth and late blooms. A quarter of Rose trees I pruned yesterday I cut so severely they look as bare as if it were February. I never saw spring flowers suffer in the same way. I have had all my Golden Thyme killed quite to the ground where exposed to the cutting cold winds and frosts late in March, and my *Myosotis disitiflora* when almost in full flower nearly entirely destroyed a week ago. It is likely, however, to be a good fruit year; tremendous blossom on Apples, Pears, and Plums, and if only a favourable May sets in the blossom will escape.—C. P. PEACH.

INFLUENCE OF THE STOCK.

I WANT to know from those who have had personal experience in the matter, are not prejudiced in any way, and who gain their knowledge from Nature's book as much as from those composed and manufactured by man, to what extent are the fruit-tree stocks in use at the present day the cause of the diseases and shortcomings of the fruit trees? With me the subject is like the Scotch verdict, "not proven," therefore anything I may say on it must not be taken for granted. Neither must it be taken for granted that because our Apples and Pears are on the Paradise and Quince stocks that there is no further room for experiment in this direction. It is not long since it was almost universally believed that *Daphne indica* would not do on its own roots, and even now it is firmly believed the royal blood of the queen of flowers will not suffice to keep her in life and vigour without an admixture from a plebeian source. I have long ago proved to my own satisfaction that both these are errors. Convincing other people is difficult, but I believe the faith in foreign stocks and an exclusively artificial cultivation are gradually losing ground.

Have Peach or Apricot trees from seed or budded on their

own natural stocks been grown to any extent in this country lately? If not in this country, can any of your readers give personal experience of those grown in America or other countries? I know Peaches are said to suffer from the "yellows" when on their own roots, but I imagine other trees would have the yellows, or perhaps the blues, if the medium for their lower extremities was not suitable. Are Peaches and Apricots on their own roots as liable to gum as those on the Plum stock? Do they flower as early? Is not the gumming partly caused by the Plum stock starting into growth too early and exciting the sap into motion before there are leaves to take it? Plum roots may be said to grow all winter; they are growing, I know, at Christmas. If they do rest, which I very much doubt, it is before that time. With Peach roots I have no experience, and seek for information.

Do not Apples on the Paradise, and Pears on the Quince, start into growth and bloom earlier in the season than those on the free stock? I have many trees on both dwarfing and free stocks, but not a sufficient number of any one variety on different stocks to enable me to answer this question satisfactorily.

We are not so dependant on dwarfing stocks as we used to be when the fruit trees were hacked about so much more with the knife, and thereby made to grow stronger and keep longer in an unfruitful state. We guide our trees more in a semi-natural manner instead of attempting to drive them in a directly opposite way to the natural one, and the consequence is that they produce fruit earlier and of better quality. To keep the roots from rambling we lift, and if necessary shorten a few times while the trees are young, thus bringing them into the habit of forming fibry roots near home; while to prevent them entering cold unsuitable soil we find there is nothing so effectual as keeping the surface soil in a suitable state as regards moisture and richness, and, of course, not digging and cropping it.—WILLIAM TAYLOR.

EUONYMUSES AS GREENHOUSE PLANTS.

AMONGST hardy evergreen shrubs there are few so pretty for pot cultivation and greenhouse decoration as *Euonymus japonicus aureo-variegata* and *E. radicans albo-marginata*. The first-named variety has deep green and beautiful bright golden-marked leaves, and is the most effective variety. When well grown in pots it is quite as grand in the greenhouse as the yellow-marked *Orotons* are in the stove. It is easily increased from cuttings. Eight or ten may be placed in a 5-inch pot amongst some peat and silver sand. They will root in a close frame at nearly any time of the year. As soon as they are well rooted each plant should be potted singly into a 3-inch pot. This time the rooting material should consist of equal parts of loam and peat, with an addition of sand. As soon as they begin to root into this there is no danger of them suffering through exposure; but they need not be kept long in any other place excepting the greenhouse, as when quite small they are extremely useful and ornamental for mixing with other little plants on the front row of shelves. A 3-inch pot will contain a plant 15 inches high and 6 inches through. When this size is reached they should be transferred to a 5 or 6-inch pot. The same kind of soil should be used at this potting and all subsequent pottings. They may be potted at any time and returned at once to their old place. They do not require to be kept close and shaded like many plants for a week or two after potting. They root about as freely as Box does, and on this account great quantities of water are required in the growing season when the pots are full of roots. More root room should be given whenever it seems much wanted. Exceedingly handsome specimens can be grown in 10 and 12-inch pots. A larger plant than these will hold should be placed in a tub. The variety under notice has a good habit of its own without any training. Sometimes the leading shoot may require the support of a stake. Side shoots which show an inclination to straggle from the line of the others may be tied into a vacancy or cut back. The bottom growths seldom fail to extend in proportion to the main shoot going upwards. The leader may be stopped at whatever height the plant is wanted. They look best in a pyramidal form.

When the plants become too large for the shelves they are well adapted for placing amongst Camellias and other greenhouse shrubs, few of which are like in colour the glossy, strikingly-marked foliage of this *Euonymus*. The foliage of *E. radicans albo-marginata* is green in the centre and edged with pure white. It has a trailing or climbing habit. In pots it hangs

over their sides, and is very pretty in this style. It may also be made to assume a pyramidal aspect; attention to staking and tying throughout the growing season will secure this. Its requirements in the way of root, soil, &c., are similar to the yellow-blotched one, and they are both alike subject to become infested with green fly. Occasional syringing does much to remedy this, and it is the least troublesome way of keeping the foliage clean and healthy. Failing this the glossy leaves are easily sponged with soap and water. When filth becomes established this is the most effectual way of removing it.—J. MUIR.

THE GREAT CENTENNIAL HORTICULTURAL EXHIBITION AT BRUSSELS.

(From our Special Reporter.)

We visited Brussels with great anticipations. We expected to find a display of plants rich in character, great in extent, and, if not novel, yet artistic in arrangement. We expected to find old plants well cultivated, and new plants possessing that charm and interest which plants of rarity and merit alone can command. We expected to find in this nation of horticulture not only the best of the nation's horticultural treasures, but the best of those from other lands. We expected to experience the change incidental to a sojourn in a foreign state, yet feeling at home by the presence of familiar plants and familiar faces.

We found all these. We found old plants bearing the impress of skilful culture, and new plants in their all-absorbing powers of attractiveness. We found not only artistic grouping but taste in arrangement combined with intrinsic individual merit of the plants exhibited—not groups arranged so as to hide the failings of the plants composing them and which pall on the appetite by close inspection, but collections which, the longer they were looked at, the more closely they were examined, the more satisfying they became. We found the richest examples of the plants of the nation which we visited, and plants also—plants which any nation may be proud to own—which we had seen before we left our shores. We found the welcome we anticipated, the attentiveness, courtesy, and hospitality which were extended so freely and offered so happily. We found familiar faces, and although on foreign soil did not feel as strangers in a strange land. We not only knew our mission but knew that our mission was known. It was ours, as representing British horticulturists, to recognise the great efforts, enterprise, and success of the friends we visited, and to convey in return the feeling of sympathy binding nation to nation in the peaceful bonds of the science in which each is interested and engaged in promoting. We therefore for the time being ignore the "silvery streak" dividing us, and join in the Centennial now celebrated as the unity, which time only will bind more closely, of the great family of horticulturists, and now hasten to tell our friends in Britain and those also abroad something of the character of the great gathering which has been brought together in the beautiful city of Brussels.

If it were not great, how and where could we find an exhibition worthy of that designation? Where can we find more powerful patronage? Where more enterprise on the part of the managers, or more tempting facilities offered to exhibitors? With prizes of honour offered by their Majesties the King and Queen of the Belgians, there were also 120 gold medals offered for competition, 140 silver medals, and upwards of 200 silver-gilt medals of merit. To some of the grand gold medals were added 100, to others 200, to others, again, 500, and to one 1000 francs. Besides these attractive honours the Council of Administration engaged to defray the cost of transit from foreign countries of all consignments of plants sent to the Exhibition. A policy so liberal and spirited could only command success, so far, at least, as regards the richness and extent of the Exhibition, as it is worthy to achieve equal success financially and commercially.

In noting the collections exhibited no attempt is made to enumerate the whole of the successful exhibitors, the object being to afford a "general idea" of the Exhibition, and those who contributed most successfully to render the event memorable in horticultural annals.

Surrounded on all sides by nations advanced in civilisation and refinement, Belgium is peculiarly well situated for being the seat of Horticulture. England, France, Holland, and Germany are her border kingdoms, and from all those kingdoms were those who recognised the Great Brussels Centennial; and although exhibitions on a large scale have latterly been of

frequent occurrence, and although the spring season of the year is an exceptionally busy time with nurserymen, yet plants have been provided and time has been found for a grand display and a reunion of horticulturists at this celebrated gathering.

The building in which the Exhibition is held is a wooden structure about 80 yards long and 50 yards wide. It is divided into a lofty central transept and four side avenues, with an ante-room. At each end of the central promenade large mirrors are placed, and over them and at the tops of the pillars national and municipal flags and banners are arranged. The space, although great, is not sufficient to accommodate the plants without crowding, and owing to their continual arrival down to the latest permissible moment there is scarcely time to dispose them attractively, and some of the erections were in a rough and unfinished state. In a word the building and its accessories are not worthy of the splendid plants which they contained.

At the entrance end of the building some gigantic Palms arrest attention, specimens which for their size and weight made one wonder how they had been transported and placed in their positions. The right side of the central promenade is also occupied with Palms and Cycads, splendid plants of *Areca*, *Phoenixophorum*, *Pritchardias*, *Thrinaxes*, *Astrocaryums*, the distinct *Caryota Rumphii*, *Livistonia Hoogendorpi*, *Chameroops* in several species, &c. These are elevated each on its own pedestal, the fronds almost reaching to the roof; and at the front are smaller plants of *Phoenix rupicola* and *reclinata*, *Cocco Weddelliana*, *Corypha australis*, *Dammonorops*, *Phycosperma Alexandræ*, &c. These collections of Palms are large, and the plants healthy and fine, such as could only be seen at a continental exhibition.

On the left, and dividing the central transept from the next arcade, are also several large Palms. We next stop at a group of remarkable Ferns, the fronds of many of them being 15 feet in length. *Angiopteris hypoleuca*, A. Willinkii, and A. Mi-queliiana from Mr. Willink, Amsterdam, are of this character; and near these a group of *Lyopods*, *Selaginella Galleotiana* being nearly 5 feet in diameter and altogether fine and elegant. We also note fine groups of *Phormium tenax variegatum* from Madame Legrelle d'Hamis, and we arrive near the other end of the building and take shelter in a grove of Tree Ferns. *Balanium antarcticum* was perhaps 25 feet high, the trunk being fully 2 feet in diameter; *Cibotium princeps* and *Cyathea medullaris* were nearly of the same height; *Cyathea Dregei* had a trunk a foot in diameter and 10 feet in height. Palms, Ferns, and Cycads are also placed in the corners of the building, Mr. Linden being the most successful exhibitor. In striking contrast to these fine plants, and grouped in the side corridors are other Belgian collections, the most important being

Azaleas.—The plants in these collections are simply marvellous for their perfect culture and massive heads. The finest plants we have recently seen in London are poor in comparison with these wonderful specimens. The plants are mushroom or umbrella-shaped, and are from 2 to 5 feet in height; the heads varying in size from the dimensions of a lady's parasol to those of the largest carriage umbrella. The plants are as perfect as if cast in moulds, the blooms being so densely packed that not only a vestige of foliage is not visible, but it can scarcely be found by the insertion of the fingers and pencil. All are very fine, and the striped and mottled examples of *punctulata*, *scarlet* and *white*, and *Souvenir du Prince Albert*, *rose* and *white*, splendid, are especially conspicuous. Alfred Delinon was a glowing head of crimson, and contrasted finely with the soft lilac of its companion, *Reine des Pays Bas*. Dr. Livingstone, glowing pink, is extremely effective; and the fiery heads of *Eclatante* and *Roi d'Hollande* were quite dazzling.

In the opposite corridor are also magnificent plants, the most remarkable being *Reclinata*, Jean Van Geert, Eugène Mazel, *Floribunda elegans*, *Modèle*, Mons. Keteleer, *Serapis*, La Victoire, Flag of Truce, Duchesse Adelaide de Nassau, Stella, Theodore Preusser, Madame Alex. Hardy, Alwin Petsold, Madame Marie Van Eekhaute, Reine des Roses, Louis Margottin, and La Superbe. Some splendid double, semi-double, and mottled varieties of great merit raised by Mr. Van Houtte are exhibited. Amongst these Marie Van Houtte, Juliette, François de Tave, Alice, Daphne, Madame Alex. Van Lagenove, Jean Van Geert, Mdlle. Leonie Van Houtte, Sigismund Becker, Mrs. Wright, Comtesse Eugénie de Kerchove, Jules Van Loo, Argus, Baron Ed. Oasy, and Meteore are within the line of vision, and quite superb. The varieties noticed are amongst the finest exhibition Azaleas extant. The specimens cannot be forgotten by those who saw them, and every one of these will agree that a description doing them justice cannot be written. Although opinion may vary as to the ideal now accepted as a perfectly finished plant, at present the style is all flowers, no foliage. The principal gold medallists were Mr. Ghellinck de Walle, Mr. Van Houtte, Vervaeke, and Van Eekhaute. We must not, however, leave the Azaleas without noting one or two varieties. *Fimbriata* (Schults), white, and, as Mr. Barron well

said, double as a *Petunia* or *Balsam*; Charles Turner, a light mottled variety, splendid flower; Flambeau, brilliant; and several others. The remarkable double variety has been purchased, we believe, by Mr. Turner of Slough.

Ghent *Asaleas* (*Asalea pontica*) are also admirably exhibited, demonstrating how effective are these plants for forcing and decorative purposes. Large specimens, plants 2 to 4 feet in diameter, are exhibited by Mr. Van Houtte. There were splendid plants in his varieties. In these Dr. Auguste Cambeer, Louis Clime Van Houtte, Davisi, Louis Blommaert, Minerve, *Aurantiaea variegata*, *Straminea*, Louis Hallebuyck, Sang de Gendbrugge, and, best of all, Diamant, are conspicuous by their excellence. The gold medal was awarded.

Asalea mollis in variety is also exhibited in splendid condition by Mr. Van Houtte. No one who has not seen well-grown varieties of this type can appreciate how distinct and imposing they are. The best were Comte Papadoli, Baron Ed. de Rothschild, Chevalier Ade Reali, Seedling, Reine des Belges, Comte de Gomer, and Caroline Legrelle d'Hamis. These are recommended to the notice of all growers of gay spring decorative plants.

Rhododendrons are numerous and excellent, the plants being healthy and remarkably well bloomed. 204 exhibited an admirable collection, the best being *Vesuvius*, crimson; *Decoratum*, rose; *Limbatum*, Madame Wagner, Lord Broughton, *Bylesianum* in several tints of rose and pink. The best lilacs were *Rosea superba*, Elise, and very delicate and good *Evelynae*. 203 had a good collection; The Grand Arab, Michael Waterer, Sir C. Napier, Minnie, Mr. John Waterer, Elfride, Lady Alice Peel, *Everestianum*, *Quadrone*, Prince Camille de Rohan, and Mrs. John Clutton being very superior. A new variety exhibited by Mr. de Coninck, Frederick de Coninck, purple with brown spots and orange band, was splendid. Mr. Van Houtte and Mr. Heit also exhibited successfully.

Camellias are not numerous, but some small plants were admirably cultivated. The plants were about 2 feet high and 1 to 2 feet in diameter, and for healthy foliage and number and quality of blooms we have not seen them equalled. Lemichez, Rubens, Alba plena, Auguste Delfosse, Valtavareda, Unica, Rose de la Reine, Lavinia Maggi, and *Aspasie* were the varieties most compact in habit and most floriferous. Plants in tubs 3 feet high and through with rich green foliage and fine blooms are also exhibited; Mr. de Ooster and Mr. Van Bokstaele obtaining the chief prizes.

Some admirable groups of ornamental-foliaged plants are exhibited. The most noticeable were *Curmeria picturata*, *Maranta fasciata*, *Dichorisandra argenteo-marginata*, *Bertolonia Van Houttei*, very fine; and *Phyllotenum Lindeni*. Excellently exhibited also are *Anthurium crystallinum*, leaves 2 feet long, the plant being 5 feet in diameter; *Maranta Maselli* was 8 feet across and very handsome; *Sphærogyne latifolia*, a noble specimen, the leaves being 18 inches long and 15 inches across, with good *Oretons* and *Dieffenbachias*.

We now come to Mr. Linden's collection of twenty-five *Dracenas* and fine admirable examples of culture. Some of the plants are 8 feet in height furnished with foliage to the pots, some of these leaves being 4 feet in length. The specimens of *D. Youngii* was splendid, and almost equally fine were *D. Shepherdii*, *D. Baptistii*, and *D. Mooreana*. Smaller but vigorous were *D. Regina*, *D. Cassanova*, *D. Reali*, *D. magnifica*, *D. albi-cans*, *D. hybrida*, *D. splendens*, &c. For size and good culture these plants were remarkable, but they had really no chance of successfully competing with the equally healthy though smaller and striking new varieties from Mr. Wills, and that the Anerley seedlings should defeat a collection like Mr. Linden's is the most powerful testimony of the value of the English varieties.

We have now to note a magnificent group of *Gloxinias* from France. We have never before seen varieties to surpass if equal these; the forms of the flowers, the great substance of their petals, their rich colours and chaste markings, and the massive foliage of the plants were alike remarkable.

Mr. Van Houtte exhibits a collection of *Caladiums*, a rich case of *Bertolonia*, *Sonerilas*, *Peperomias*, *Anacochilus*, *Dichorisandras*, &c., and a striking group of *Gesneraceae* plants, the most remarkable being *Persea hypocyrtiflora*, *Gesnera rosea* Baesi, *G. refulgens*, *G. regalis*, and other varieties, also *Cyrtodorea metallica*.

Plants of *Kalmia latifolia* in tubs were 3 feet in diameter, and were healthy and floriferous. They were exhibited by Mr. Vuytsteke. *Eriostemons*, *Boronias*, and hardwooded plants generally are not numerous or equal to the best English-grown plants; and nothing of this nature in the Exhibition could approach the specimens sent by Mr. B. S. Williams. *Agaves*, *Yuccas*, and *Dasylirions* were well exhibited by Mr. Linden and other cultivators. A grand plant of *Imantophyllum miniatum* is exhibited by Mr. Van Schoor. It was 4 feet in diameter, and crowded with fine heads of flowers.

A collection of *Marantas* from Madame Legrelle d'Hamis contained plants of remarkable size and vigour. They ranged from 2 to 5 feet in diameter, the leaves being in splendid condition.

The finest of these is perhaps *M. pacifica*, green with silvery-grey bars; *M. Wallisii*, tricolor; *M. orbifolia*, *M. Porteana*, *M. vittata*, *M. rosea picta*, *M. Leemannii*, *M. Mackoyana*, and *M. coreifolia*. A splendid plant of *M. fasciata*, which is very similar to if not identical with *M. pacifica*, is exhibited. The plant was 3 feet in diameter, in perfect colour and markings.

Tuberous-rooted *Begonias* are exhibited by Mr. Van Houtte in great excellence. We have seen none to equal these gay yet elegant flowers. Some of them were not named; others were, as *Pearcei*, *superba*, *Madame Oscar Lamarque*, *Madame Zimmerman*, *Emeraude*, *Charles Raes*, and *Topaze*. *Aspidistra lurida* variegata is exhibited in splendid condition by Mr. Linden, the green of the massive leaves being rich and the white pure.

Hyacinths.—Mr. J. H. Kralage, Haarlem, produced a grand effect by exhibiting in masses, ten bulbs of distinct varieties being grown in pans 9 inches in diameter. The spikes were not only fine, but were uniform in height and substance. They have been grown and selected for this mode of culture with special care. All varieties are not adapted for growing in this way. Of the sorts exhibited the best were—Whites: *Madame Vander Hoop*, *Prince of Waterloo*, *Mirandoline*, *Paix de l'Europe*, *La Belle Blanchisseuse*, *Michael Angele*, *Neotar*, and *Mont Blanc*. Blues: *Kronprinz Von Schweden*, *Lord Palmerston*, *Nimrod*, *Benjamin Franklin*, *Laurens Koster*, and *Justus Von Liebig*. Reds: *Queen Victoria Alexandrina*, *Oscar Von Redwitz*, *Prosper Alpini*, *Princess Clotilde*, *Von Schiller*, *Princess Royale*, and *Duchess de Richmond*. These masses were exceedingly fine, producing a much greater effect than the plants with single spikes, and are admirable for purposes of decoration. Several collections in single spikes were exhibited, the pots being roughly hidden by moss. Although fairly good collections were staged they were not equal to the productions of Messrs. Veitch, Cutbush, and others which have been seen at the London exhibitions. Messrs. Veitch had a collection sent to Brussels, but the plants were injured in transit and could not be staged.

Tulips were generally superior to the *Hyacinths*, the varieties being similar to what have been exhibited in London. *Narcissuses* were poor. *Cinerarias* were far behind such plants and varieties as we find exhibited at home by Mr. James. Tricolor, Bicolor, and Zonal *Pelargoniums* were not equal to plants of Mr. Laing's and Mr. Petridge's cultivation. *Amaryllides* were very attractive. Many of the varieties were splendid in their markings, the central band in some and the edgings of the petals in other flowers being most clear and distinct. They do not, perhaps, contain the fulness of flower and the substance of English-raised seedlings, but their beauty is unquestionable.

Mr. Van Geert, Antwerp, exhibited *Conifers* not for competition, amongst which were examples of his new variegated *Weeping Yew*, *Taxus pendula aurea*.

We have now noted many collections submitted by foreign exhibitors, and given them the credit which they deserve, and we must now devote some attention to the consignments of plants from England. We shall not be accused of permitting our patriotism prejudicing our judgment when we say that the English plants for rarity, quality, and beauty were worthy at least of being exhibited in Belgium. If the Belgian Palms and Ferns were imposing, and the *Asaleas* almost startling by their perfectness, we had amongst English productions the splendidly arranged groups of a hundred *Orchids* and other rare and choice plants from Messrs. Veitch, also *Roses* and *Clematises*. We had the rich group of *Orchids* from Mr. Williams, which won the President's grand gold medal and 1000 francs; also Mr. Williams's fine Ferns, stove and greenhouse plants, and miscellaneous collections. We had Mr. Bull's new, rare, and beautiful examples, which received the honours they deserved. We had Mr. Wills's unrivalled *Dracenas*, the raiser of which—M. Bause—has, as was well said by one of the greatest of Belgian horticulturists "written his name for ever in the history of fertilisation;" and last but not least, the extensive collection of *Roses* in pots from Messrs. W. Paul & Son of the famed Waltham Cross Nurseries. These several groups represented England in a manner to which no exception could be taken, and that they have contributed immensely to the success of the Exhibition is willingly admitted and recognised by all visitors.

It was gratifying to notice the freshness and perfect condition of these plants after their long journey by land and sea. Fragile *Orchids* and other tender stove occupants arrived in the structure at the Place du Petit Sablon at Brussels almost as fresh as the plants usually appear at the London exhibitions. It is not possible to enumerate the plants composing the several English groups, but may say that the highest prize—the prize of honour offered by His Majesty the King—was won by Mr. B. S. Williams. This was the grand gold medal offered to the stranger who contributed most to the splendour of the Exhibition. Truly Mr. Williams's consignment was a splendid one. The twenty-five *Orchids* formed one of the finest groups ever staged. The twenty stove and greenhouse plants were far in advance of other plants of the same nature. The gold-medal collection for twelve plants introduced since 1873, and the gold-medal group for twelve plants of recent introduction, the splendid Ferns, the

attractive miscellaneous collection, and the collection of *Cyclamens*, were in the aggregate overwhelming in weight of merit, and hence won the premier prize.

For skill in arrangement as well as intrinsic merit the collection of Messrs. Veitch was irreproachable. Its richness and attractiveness won general admiration. The fine spikes of *Orobolids*—ten varieties of *Cypripediums*, thirteen sorts of *Dendrobiums*, five of *Masdevallias*, sixteen of *Odontoglossums*, nine of *Oncidiums*, four of *Phalenopsis*, also *Saccolabiums*, *Cattleyas*, *Trichopillias*, &c.; besides these were *Dracenas*, *Ocotons*, *Nepenthes*, *Ferns*, and numerous others in splendid condition. In this group *Dioscorea retusa* was most elegant, and half a hundred others were worthy of individual mention, but space forbids. Messrs. Veitch also exhibited a collection of *Roses* in first-rate order, and attractive plants of *Oleandras* Miss Bateman, Lady Lonsborough, Albert Victor, Henry, &c. For these plants the gold medal of honour offered by the Comtesse de Flandre to the stranger who contributed most to the splendour of the Exhibition was awarded. These were the only two prizes of honour in the schedule; but Mr. Bull exhibited such superior new plants that he had the special honour of receiving a special medal value two hundred francs, in addition to the gold medals that he won in the classes.

The twenty-five *Orobolids* staged by Mr. Williams were unusually rich. *Dendrobium Devonianum* alone contained three hundred blooms; *Vanda suavis*, five spikes of great luxuriance; *Cattleya Mossia superba*, thirteen blooms; *Cypripedium caudatum*, twenty flowers; *Cattleya Mendallii*, twelve flowers; *Cypripedium biflorum*, thirty; *Dendrobium Wardianum* and noble, flowers uncountable; *Cattleya citrina*, eighteen flowers; *Oncidium sphacelatum*, eight spikes; *Cypripedium villosum*, fifty flowers; and superb examples of *Odontoglossums Roesei*, *Masdevallia Lindenii* and *Vetichiana*; *Lycaestes Harrisonii*, *Phalenopsis*, &c. Mr. Williams won the grand gold medal for six *Odontoglossums* with *Odontoglossum citrosum roseum*, six spikes; *O. Pescatorei*, *O. Alexandra*, *O. nevium majas*, *O. Roesei*, and *O. gloriosum superbum*.

Now that we are amongst the *Orobolids* we may note that in Mr. Linden's gold-medal collection of *Orobolids* *Vanda tricolor cinnamomea* was remarkably fine, as were also *V. suavis*, *Dendrobium Wardianum*, *Cattleya Skinneri*, *Cypripedium barbatum*, *Odontoglossum triumphans*, and *Cypripedium villosum* were profusely-flowering specimens, and many others possessed great merit.

In this collection a specimen of *Odontoglossum vexillarium* from the Baroness James de Rothschild arrested the attention of all visitors; it had four spikes and thirty grand flowers. Near it was a remarkable *Orobolid*—*Epidendrum Wallichii*, exhibited in flower for the first time in Europe by B. Warner, Esq., Bromfield, Chelmsford. The sepals are orange scarlet, and the labellum buff mottled with brown. Mr. Warner had the gold medal for his valuable work on *Orobolids*.

Mr. Bull won the grand gold medal—the first prize in the schedule (the "blue ribbon")—for six new plants not in commerce with the grand Palm *Pritchardia grandis*, *Dieffenbachia Shuteiworthii*, *Aralia splendens*, *Ocoton elegantissimum*, most brilliant and elegant; *Dieffenbachia Ohlsonii*, and *Alcaesia Johnstonii*; also a similar award for three plants with *Aralia elegantissima*, *Dracena Goldiana*, and *Artocarpus Canoni*. For the most distinct *Dracena*—*D. Goldiana*, which was noticed last week—Mr. Bull received the gold medal, Mr. Wills being placed second with the splendid *D. voluta*. For the gold medal for the single Palm Mr. Bull won easily with *Pritchardia grandis*, Mr. Williams being second with *Kentia Mooreana*.

Amongst the gold-medal collections of plants of recent introduction staged by Mr. Williams were *Pandanus Veitchii*, splendid; *Eichmea Maris-Reginae*, *Cypripedium niveum*, *Adiantum gracillimum* in excellent order; *Dracenas Baptistii* and *Fraserii*, and *Nepenthes Ohlsonii*.

Mr. Wills exhibited new plants, small but in splendid condition, the *Ocotons* being in fine colour; and *Phyllostenium Lindenii* and *Anthurium crystallinum* unequalled in quality by any plants of the same kinds in the Exhibition. Mr. Wills also staged superb examples of *Yucca filamentosa variegata*, and for the collections received silver medals.

But perhaps the most striking and interesting plants in the Exhibition were the twenty-five new *Dracenas* which worthily won the grand gold medal and 500 francs. These are undoubtedly the finest and most remarkable varieties in Europe, and are improving in colour as they grow older. They have been previously described, and it only remains to be said that they are better than ever—plants of distinct character, undoubted beauty, and great value.

The *Roses* from Messrs. W. Paul & Son were an immense consignment, there being hundreds of them, the plants ranging from 6 feet high and 4 feet in diameter to smaller plants in 7 and 8-inch pots. The plants comprise Hybrid Perpetuals, Teas, and *Noisettes*, and will make the fame of the firm producing them as familiar on the Continent as it is respected in England.

Mr. Turner, Slough, staged sixty *Auriculas*, the plants, as they deserved, attracting a considerable amount of attention. In the class for fifteen plants the large silver-gilt medal of merit was awarded to Mr. Turner. The remaining plants were not entered for competition.

The judging of the plants was completed on Saturday, on the evening of which day the assistance of the military was brought into requisition, and the soldiers under competent guidance commenced moving the plants and re-arranging them for effect. This work was conducted during the night, and a complete transformation was effected for the formal opening of the Exhibition by the King and Queen at noon on the 30th ult. Their Majesties arrived punctually at the time named, and received an enthusiastic reception. The principal exhibitors were introduced to the King, and His Majesty conversed with them with his usual freedom and affability, also inviting them to dine with him at the Royal Palace.

The English exhibitors covered themselves with honour, Mr. Williams receiving ten medals, Mr. Bull four for new plants, Messrs. Veitch & Sons (who did not compete in the classes) two, and Mr. Wills four, these medals being of the highest value.

The prizes of honour for Belgian exhibitors were awarded: the Queen's to Mr. Linden, and the Comtesse de Flandre's to Mr. Van Houtte. Mr. Linden is Vice-president of the Society, and exhibited largely, staging many valuable collections. Mr. Van Houtte's collections were also on an extensive scale of superior merit.

Of fruit the exhibition is small. Some moderately good Strawberries are exhibited, and the principal prizes for Grapes were won by Mr. Abert Vandewover, & Cappellen, Antwerp.

The arrangement of the plants was agreeable. They were not disposed to create an imposing effect to be seen at a glance, but were so grouped that a fresh collection had prominence at every few yards, this being effected by the rather bold curves of the promenades. The building was laid out in serpentine walks, bordered with ornamental wickerwork. At the edge of the walks *Mignonette*, *Lilies*, small *Adiantums*, *Spiras*, &c., were placed, and beyond were bold irregular groups of ornamental-foliaged and flowering plants. At one end of the building was a fountain, around which plants were artistically arranged. The structure was too small for the effect to be one of grandeur. It was nevertheless very picturesque, and a vast improvement on monotonous stages and hard straight lines.

The premier prize for the best new plant in or out of flower went to M.M. Jacob-Mackoy et Cie. for *Maranta Messangeana*, a beautiful plant, the stock of which has been purchased by Mr. Bull. The same exhibitors had the first prize also for the best new plant in flower—*Pavonia Vieti*, a plant apparently possessing but little merit.

When it is considered that the Belgian plants alone—the noble Palms, magnificent *Araucas*, with other fine-foliaged and flowering plants—would have produced an exhibition worthy of royal patronage and of a long journey by horticulturists; when also it is considered that the English consignment was of sufficient extent and value to alone have made an imposing exhibition, it will be readily understood that the alliance of the two nations, with valuable contingents from France and Holland, culminated in a display of almost unequalled magnitude and importance; and although the utmost was done in making the most of the space at disposal, a building nevertheless as large again was required to do justice to and exhibit to the best advantage the noble collections which were sent in celebration of the Centennial International Exhibition of the Société Royale de Flore de Bruxelles established in 1860.

FRUIT.

At so late a period of the season it was not to be expected that there would be much shown in the way of Fruits. The only exhibitor of Pines is Baron de Vinck d'Orp, and the fruit though well grown was not ripe. There are some excellent Strawberries in pots exhibited by Baron d'Hoogvorst, which deservedly received a gold medal. They could not have been better, but we could not say much of any of the other collections. The Vines in pots are wretchedly bad, but the separate bunches of Grapes which are shown by M. de Goes and Baron d'Hoogvorst are very meritorious. The collection of Apples and Pears of M. de Biseau is very fine, as are also the Apples of M. Capelinck. A beautiful collection of Apples was sent by Mr. Jones, gardener to Her Britannic Majesty at Frogmore, which was much admired, and though not shown for competition was awarded a silver medal.

An interesting exhibition was made by Lady Dorothy Nevill of Dangstein, consisting of an envelope case, a blotting-case, and paper-knife made from oak wood stained with the mycelium of *Peziza ruginosa*, which is found in the woods at Dangstein. It is very beautiful, and when polished resembles malachite. Although this was exhibited *hors de concours*, it was awarded a silver medal.

In no country in Europe are the representatives of horticulture held in such honour as they are in Belgium. It is not on

some solitary occasion only that they have experienced this, but whenever there is an opportunity offered for their assembling together they meet with a recognition which they receive nowhere else.

On this occasion no sooner had the representatives of the different nationalities arrived in Brussels than a warm reception was accorded to them by the Burgomaster at the Hotel de Ville; but the greatest honour was reserved for the opening day of the Exhibition, when the delegates from the different governments and societies, members of the jury, and some of the leading exhibitors, were invited to a banquet by the King and Queen at the royal palace. Nothing could be more kind than the reception their Majesties gave their guests, with each of whom they entered freely into conversation; and to the British representatives the banquet had an additional interest from the whole of the service, which was solid silver, being the wedding present to the Princess Charlotte by her father George IV. on her marriage with Prince Leopold of Saxe-Coburg, afterwards King of the Belgians. Every plate was marked with the royal arms of Great Britain. What gave especial importance to this occasion was that their Majesties remained in Brussels for the event, and departed for Germany late at night after the entertainment was over—an act of courtesy and condescension such as horticulturists are not familiar with at home.

Tickets for the opera were provided for all the guests who after the banquet were disposed to avail themselves of them. Another banquet was given by the Société Royale de Flore on the evening of the 1st of May, and numerous other attractions were offered, leaving nothing to be desired to render the visit of foreigners agreeable and memorable.

ROYAL HORTICULTURAL SOCIETY.

MAY 3RD.

FRUIT COMMITTEE.—Henry Webb, Esq., in the chair.—Mr. Bust of Eridge Castle Gardens sent three dishes of seedling Apples, said by him to be a seedling between Sturmer Pippin and Dumelow's Seedling, which was not considered of sufficient merit, and was gone at the core. Mr. John Cheshier, Connington Castle Gardens, also sent one dish of eight seedling Apples, considered by the Committee to be a promising sort, and requests that it may be sent again in November and June next. Messrs. Harrison & Son of Leicester a dish of six Apples, which is requested to be sent again in November and early next year. Mr. W. Earley sent a collection of seven dishes of Apples and Pears, including twenty-five sorts, to which a letter of thanks was awarded. A collection of thirty-six sorts of Apples and Pears were sent by Mr. Middleton of Wynnstey, Ruabon, but they arrived too late for adjudication by the Committee.

Messrs. Lane exhibited a box of bunches of Muscat of Alexandria Grapes, sent as specimens of the berries setting in damp treatment. The bunches were large and the berries set very freely, and were exceptionally vigorous in footstalk. The bunches were not syringed while in bloom, but no moisture was withheld otherwise. A vote of thanks to Mr. Lane was unanimously awarded.

FLORAL COMMITTEE.—H. Kellock, Esq., in the chair. Mr. B. S. Williams of Holloway contributed an interesting collection of miscellaneous plants, among which a fine specimen of the pretty *Adiantum gracillimum* and several other things of interest, including *Aralia Veitchii*, *Pandanus Veitchii*, and several Orchids. A vote of thanks was awarded. Messrs. Veitch and Sons sent an interesting collection of Clematis and other flowering plants, who received a vote of thanks. H. J. Buchan, Esq., a vote of thanks for cut blooms of *Rhododendron Nuttallii*. H. Smith, Esq. (Mr. Sumner, gardener), a letter of thanks for three plants—*Odontoglossum Alexandræ*, *Masdevallia Veitchiana* and *Harryana* in flower. Mr. Millar a letter of thanks for some cut Primroses, and a first-class certificate for *Primula Golden Queen*, cut blooms. Messrs. Carter & Co. received a cultural commendation for eight plants of *Mignonette* trained in the pyramidal form, which were full of bloom, and remarkable for health, and vigour, and size. For instance, a plant of the new white kind was 6 feet high and 4 feet in diameter; while another sort called Hybrid Tree was 5 feet high and nearly 4 feet through. Another plant of similar dimensions was, perhaps, the best-flowered of any, this was the crimson-flowering Giant. The sorts called the Pyramidal Bouquet and Dwarf Compact were conspicuous for their stout spikes of blooms. These plants filled one-quarter of the Council-room.

Messrs. Paul & Son of Cheshunt received unanimously a first-class certificate for Hybrid Perpetual Rose Duke of Connaught, a rich velvety-looking Rose of great merit. They were cut blooms, no plant of it being shown. Mr. B. Dean of Baling sent half a dozen pots of spring flowers, among them *Aquilegia formosa*, which was awarded a botanical commendation; also *Mycosotis rupicola*; double purple Auricle, very pretty; *Primula coccineoides* *acmena* *lacinata*, with a more vigorous growth than *acmena*, but the flowers larger and richer in colour, with the petals very prettily and regularly divided: a first-class certificate

was awarded to it. Messrs. Osborne received a first-class certificate for a basket of *Pyrethrum aureum*, a cut-leaved variety and very distinct and pretty; also a letter of thanks for two baskets of *Gentiana scutellaria* in flower. Mr. Noble, Bagshot, a first-class certificate for *Clematis Proteus*, a large double flower. Captain Blake of Danesbury Park, Welwyn (Mr. Parsons, gardener), a first-class certificate for *Asalea Duke of Edinburgh*. The flowers are remarkably large and full of substance; they are a kind of orange red. Mr. C. Turner of Slough for Alpine Auricle Charles Lidgard; this of the velvet-edged kind. Also one for Gertrude Knight; this is of the grey-edged class. The Rev. A. Rawson, Bromley Common, received a first-class certificate for *Pelargonium Queen of Stripes*. As a decorative plant this is likely to be a favourite, as it is likely to be a good fancy sort. Messrs. L. Cripps & Son of Tunbridge Wells sent two new Clematises named *Souvenir de John Standish* and *Lillian*, both good kinds.

OUR BORDER FLOWERS—CHAMPIONS.

PERHAPS no plants are more admired than the *Lychnis*, *Lychnis Flos-enuli*, or, as our country cousins will have it, Ragged Robin, is a general favourite. It is commonly found in moist places and is widely distributed. The double varieties form a bouquet in themselves, and are useful for cut flowers. Some of them are much esteemed by our cottagers and often seen to advantage under their care. They are plants that do not require so much attention as some of our border flowers do, yet the better they are cared for the more satisfaction they afford. *Lychnis chalcidicum* with its brilliant flowers and its double varieties, especially the white variety *Lychnis fulgens*, are amongst the finest of border flowers. The last-named is not so hardy as some of the family, and in cold places requires protection in the winter.

L. Haageana and its white variety should be in all collections. It is of recent introduction, but has proved itself quite hardy in our climate. *L. alpina* is a charming plant for rockeries; being a native adds to its interest. *L. Viscaria* and *L. rubra plena* are really good border plants, and deserve extensive cultivation; then there is *L. pyrenaica*, *coronata*, and *mutabilis*, and others that might be named as being worthy of culture.

Most of the kinds thrive in ordinary garden soil, but are the better for having mixed with it leaf mould or well-decayed manure and coarse grit. The plants like a moderately dry situation, but should not suffer for lack of moisture. Many of them are increased by seed, and all by division after flowering, or in spring when growth has commenced. They are all the better for being replanted every year. Some of them require staking to preserve them from being broken by the wind. Many of them continue in bloom for a long time, and are very useful for affording cut flowers for home and even exhibition purposes.—*VERITAS*.

MARÉCHAL NIEL ROSE.—The bloom forwarded to you is from a plant of some years' standing established on the back wall of a greenhouse, and is planted in no border whatever, but in a box situated close by the bottom of the wall, the box being 18 inches wide by 24 deep. The earth is comparatively poor garden soil, a reason to which I partly attribute its free-blooming habit, as it makes little wood, and generally produces upwards of two hundred blooms in the early spring, some of them measuring 4 to 5 inches in diameter. The Rose is a shade wanting in colour, owing to a stage and blinds in front, which partly prevents the sun from acting upon it. Nothing can be wanting to complete the beauty of this lovely Rose, to obtain a good wall of which should be a chief effort of every gardener. In after-years an evening look at its dozens of golden blooms will amply repay him for all his cost and labour.—*JOHN BOYD, Balbriggan*.

[The Rose sent to us was very fine, and the petals of good substance but rather pale.—*Eds.*]

SUBTROPICAL BEDDING.—No. 2.

THE beds submitted are, like others which have preceded them, of flowing design and informal outline. Beds of this character are particularly appropriate to the class of plants which are suggested as suitable for imparting an ornamental appearance by their foliage and habits. For such plants geometrically-shaped beds and planting by mathematical rules are unsuitable. The plants possess a free, and some of them almost a rugged growth, and to show them to the best ad-

vantage the beds and mode of planting them must be free too. The effect produced by subtropical plants in the London parks is unquestionably enhanced by the shapeless, if I may use the

term, form of the beds, and the irregular lines of the plans of planting. The following figures represent beds and the way in which the plants have been successfully arranged.

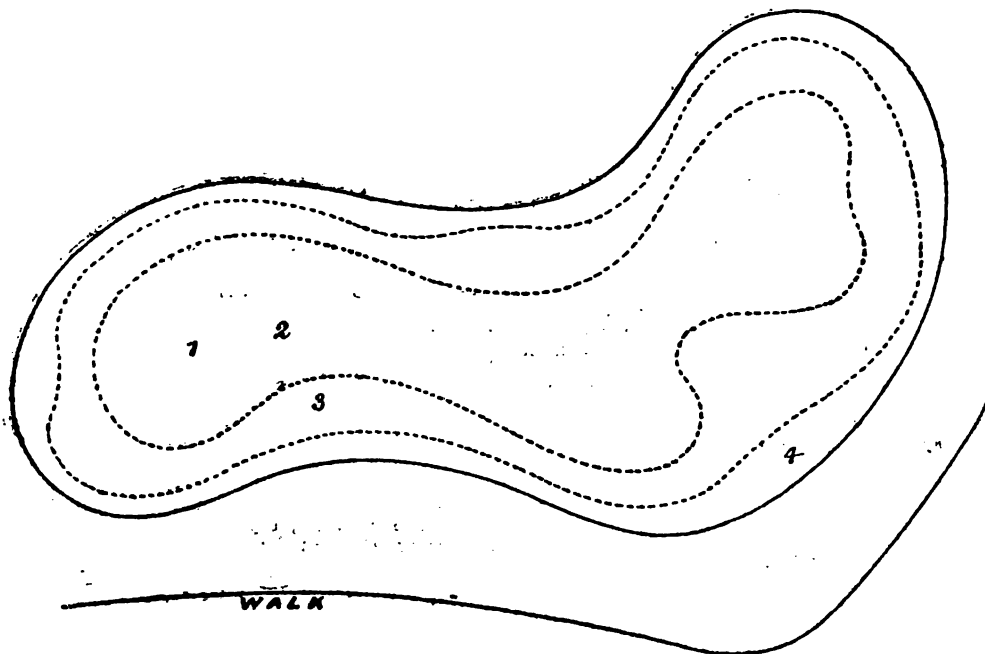


Fig. 97.—Bed No. 3.

BED No. 3.

1.—*Ferdinanda eminens*.—This is one of tallest and noblest of subtropical plants with large effective leaves. In favourable seasons the plant will attain the height of 12 feet, and is

highly distinct and ornamental. In winter it requires a warm house. It is propagated by seed in the autumn, or cuttings in spring.

2. *Solanum marginatum*.—Leaves and branches frosted

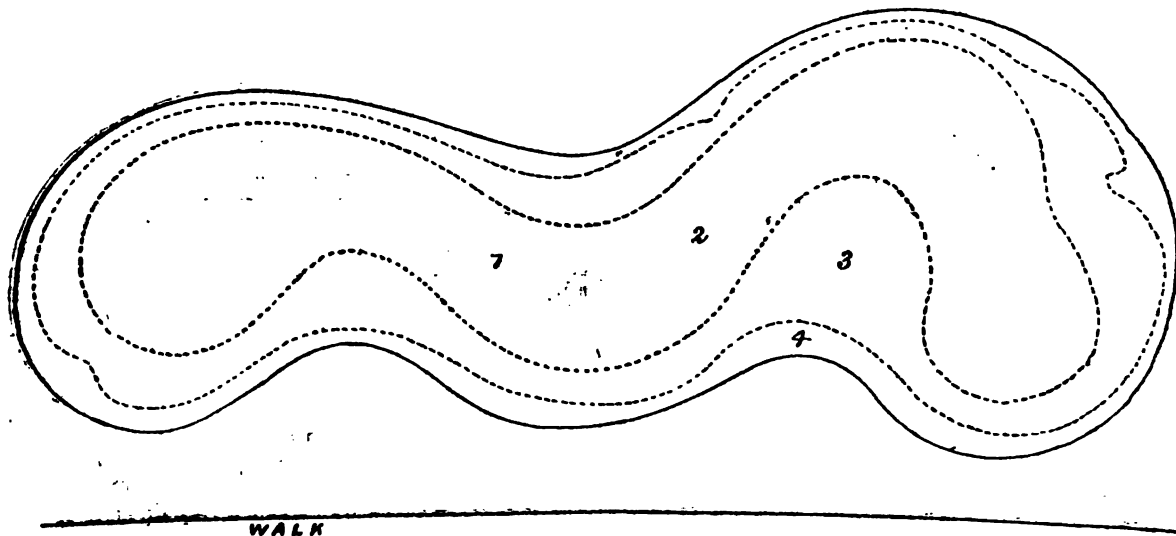


Fig. 98.—Bed No. 4.

white, upright, and branching. It is easily increased by seed sown in the autumn, or cuttings in spring. This is to be planted with the *Ferdinanda eminens*.

3. *Coleus Her Majesty*, crimson velvet.—This variety can be planted without fear of its not growing well.

4. *Veronica incana*.—This plant is quite hardy, and makes a capital edging. Divide it in the spring, the smallest bit will make a plant. It is used in the London parks with good results in choice arrangements.

BED No. 4.

1. *Melanthus major* (the Honey-Flower of the Cape).—This

is a hardy ornamental-foilage plant with handsome, distinct, pinnate leaves, on somewhat woody stems from 4 to 6 feet in height. It produces spikes of curious chocolate-brown flowers, from which exudes saccharine matter of a deep purple colour, which perpetually dripping attracts numbers of insects. It is propagated from seed in autumn or cuttings in spring.

2. *Coleus Princess Royal*.—To be used as a carpet; the leaves are like crimson velvet, but far brighter and more beautiful.

3. *Lonicera aureo-reticulata*, or the Golden Honeysuckle.—The foliage of this plant is distinctly variegated, the leaves

being smooth and bright green with the veins marked out with golden yellow. The elegant slender stems, which are when developed of a deep red colour, are slightly pubescent on their under surfaces, which gives to the plant an elegant appearance. This climbing plant when used as a carpet soon covers the ground, and it is singularly handsome. Propagate in spring for the bedding season.

4. *Stachys lanata*.—This is a large woolly-leaved plant, hardy and easily propagated by seed or division, but seedlings are the best, for the leaves grow much longer, and the plants are not apt to run to seed as cuttings or divisions.—N. COLM.

A BATCH OF SPRING BEAUTIES.

Flowers are springing up everywhere, telling us of brighter and happier days amid the fierce blasts that we have recently experienced. On April 14th the thermometer indicated 8° of frost at six o'clock in the morning, yet many flowers have survived even such treatment; among which I notice *Adonis vernalis*, *Erythronium Dens-canis* and *E. Dens-canis alba*, real gems; *Ficaria Ranunculus flore-plena*, *Iberis sempervirens*, *Omphalodes verna*, *Sisyrinchium grandiflorum* (needs protection in a season like the present), *Draba gigas*, *Aubrietia Campbelli*, *Dondia Epipactis*, *Orobis vernus*, *Myosotis dissitiflora*, *Dielytra eximia*, *Cheiranthus alpinus*, *Iris pumila*; double white, sulphur, lilac, and crimson Primroses; *Polyanthuses* in almost endless variety, *Helleborus atro-rubens*, double and single *Hepaticas* of various colours, *Narcissus Ajax*, *Pachyandra procumbens*, *Viola odorata*, *Pulmonaria sibirica*, *Scilla bifolia*, *S. sibirica*, *Lamium maculatum*, *Alyssum compactum*, *Bulbocodium vernum*, *Caltha palustris*, *C. palustris plena*, *Arabis purpurea*, *Gagea lutea*, *Erinus alpinus*, *Corydalis bulbosa*, *Bellis perennis plena*, *Veronica sibirica*, *V. speciosa*, *Arabis lucida variegata*, *Asarum europaeum*, *Narcissus bulbocodium* (*N. bulbocodium alba* should be in all gardens), *sanguineum grandiflora*, and a host of others too numerous to mention.—M. H., *Camphill, Bedale*.

DISTRIBUTION OF HEATING SURFACES.—No. 2.

In early forcing, and houses required to be kept at a high temperature at the coldest and duldest period of the year, the importance of the distribution of the heating surfaces and the means of ventilation does not appear to have had the attention it deserves. The heating surfaces are in most instances placed along the sides of spans and at the front of lean-to's. This arrangement of the heating surfaces—their concentration at the sides or fronts, the pipes alongside and over each other—has no parallel approximative with natural heat; but I must urge that in the case of the antiquated mode of heating by hotbeds of fermenting materials and by bottom heat had from chambered beds heated by hot water we approximate very nearly to natural heat, and the nearer we approach thereto the more certain are we of satisfactory results.

By the hotbed system (it is still a system) we have the heat given out by the surface of the bed equally throughout. This equality of warmth is recognised as the very best means of securing a free and equal breaking of the earliest-forced Vines. It is a ready means of affording warmth and moisture with greater regularity than warmth from hot-water pipes and moisture by sprinklings of water from a syringe. There is, therefore, great similarity between hotbed and natural heat. Solar heat passes through glass, and is also transmitted through air without heating it; hence the highest extreme of temperature is found at the earth's surface, the heat transmitted being in part refracted and in part absorbed, radiation only taking place when the atmosphere is colder than the earth. In a glass structure solar heat is trapped.

Now, the glass by which solar heat is admitted appears to intercept heat in proportion to its thickness, for uncoloured glass, which intercepts little if any light, will stop two-thirds of the heat, thick glass intercepting more heat than thin. A large house will have a considerably lessened extent of cooling surface as compared with one of considerably less size, hence the temperature of the large house will take longer in cooling, and will be maintained at a more equable temperature. The thicker the glass the longer will solar or artificial heat be in cooling.

The advantage of thick glass over thin for all horticultural purposes will be apparent, inasmuch as it enables us to retain accumulated solar and artificial heat without so speedy a diminution of temperature as when the glass is employed. 15-oz. glass has given way to 21-oz., and I have found 32-oz.

sheet glass better in every respect than 21-oz. I have also 42-oz. sheet, quarter-inch plate and half-inch, and five-eighth rough plate, which is decidedly superior in the houses glazed therewith for heat-retention to houses glazed with thin glass—15-oz. to the foot and less. I may just say that clear glass, no matter what its thickness, obstructs no light, and is not heated by the transmission of solar light; but I am bound to say that rough plate glass does become heated, a clear proof that it does stop solar heat—absorbs it, benefiting more the atmosphere outside than that of the structure.

But what has glass to do with the distribution of the heating surfaces? Much. By it we admit auxiliary heat, and by the same we suffer diminution of the heat produced and sought to be retained. The glass is the point where the struggle for mastery is fought between the artificial heat and natural cold. If the glass be such as to allow of the heated atmosphere rapidly cooling the effect will be that the heated surfaces must be kept at a higher temperature, meaning a more highly heated furnace, an increased consumption of fuel; whilst if the glass prevent rapid cooling of the heated enclosed air, the heating surfaces will, to maintain the same or a similar temperature, require to be less highly heated, a saving of fuel being effected. I also find that the glass between thick and thin makes the difference of a 4-inch hot-water pipe in 12 feet of width of an ordinary structure in favour of the former, and a considerable difference in the penetration of the heat radiated. With thick glass its penetration is a fourth more than with thin. Four pipes will not be more availing with thin glass than three pipes with thick glass.

Were it practicable the highest perfection in the distribution of the heat-radiating, heat-affording surface, would appear to be found in its greatest extent of surface—i.e., soil or floor surface, for the greater the extent of heating surface the temperature thereof will be lessened proportionate to its increase, as it must be increased in temperature in proportion to the lessened extent of heated surface. Those having beds in houses heated by hot-water pipes for affording bottom heat to Pines, Cucumbers, &c., know well enough that the piping for top heat is not required to be kept at so high a heat as in structures which have not hot-water-heated hotbeds, and the value is recognised of a bed of fermenting materials for starting Vines. If an extended heating surface, giving off heat at a comparatively low temperature, be a good thing at the starting of Vines, it certainly could not be a bad thing were it continued throughout. A hotbed giving off heat at less than 100° must be better than heat given off by hot-water pipes at 200°; the surface of the former is considerably greater. The heat with the moisture is more equable by the hotbed than the hot-water pipes, and is more conducive of free and regular growth, because more closely approximating nature. I do not pretend to contend for the practicability of such a system. I know that in the case of fruit borders they would, by an extension of the heating surface to the whole or a much greater part than at present, be practically nullified for watering and the action of air, but for plant structures there could be no reasonable objection to heating with tanks, over which could be the staging, or in fact the pots might, as we should not need to have the surface heated to an injurious temperature, be placed upon the tanks. Tanks, though we are prepared to admit them the best of all modes of affording artificial warmth, are costly, and not generally applicable; we are therefore for the present confined to heating with circular hot-water pipes, but the day may not be distant when we shall have rectangular pipes—extended radiating surface without increasing the water space.

Taking things as they are, I consider that the placing of hot-water pipes at the sides or front of houses is—when forcing is going on at midwinter, or in fact at any time when the temperature is mainly dependant upon artificial means—one of the greatest mistakes in horticultural engineering. What matter where the pipes are placed, only we secure the desired temperature? That it does form subject for consideration may be inferred from the advocacy of roof-heating by having small-bore pipes beneath the rafters to prevent the accumulated heat being cooled by cold at its entrance. There may be some good in this idea. It will prevent drip by keeping the glass at a more equable temperature with the atmosphere. The moisture resulting from evaporation will not be subject to condensation, and it will also be advantageous in lessening the necessity for so much heat being radiated by hot-water pipes in front or at the sides of the structure, at which point it must be said we have in nature the centre of cold, we artificially make it the

fulcrum of heat. I do not see how this is to be altered unless we give heat by day by a lower set of pipes, and at night by a set of roof pipes.

It is, however, against the placing of the pipes along the sides of spans and the fronts of lean-to that I wish to offer some remarks, and shall the better perhaps explain myself by a section showing results. Fig. 99 is a section of a vinery intended to have the Grapes ripe at the close of April or early part of May, and is heated by four rows of 4-inch pipes (a), which—as the house is only narrow, 12 feet—is sufficient to maintain a suitable temperature for Vines in their several stages, as indicated by a thermometer suspended at b; but in severe weather, and there is usually plenty of it between November and May, the pipes have to be kept at a high temperature—the water as hot as it can be just clear of boiling. The Vines are a mixed lot—White Frontignan (the most certain of all Grapes for early work), Buckland Sweetwater, Black Hamburg, Mill Hill Hamburg, Black Muscat of Alexandria, and Muscat of Alexandria. These Vines break well and regularly, but differ as to time. The first eyes to start are between c and d, followed by those between d and e; the latest between e and f, and are strongest in shoot and fullest in bearing between c and d, perceptibly weaker in growth and in number of bunches, and size both in bunch and berry, whilst at the upper part from e to f the break and shoots are weak, the bunches are few and small, or conspicuous by their absence. Then in setting it is all that could be desired, even with Muscats, from c to d, less good from d to e, and certainly no better set is experienced from e to f. These remarks as to setting apply only to Muscats; all the others set well the whole length of the rafter. There is also considerable difference in the ripening. From c to d the Grapes are ripe when those between d and e are colouring, and between e and f there is a difference in ripening of fully three weeks.

Now, if the heat be the cause of this discrepancy in breaking, in strength of shoot, in setting, in quantity and quality of fruit, and in ripening, the principle of having all the heating surface in front is wrong, as it certainly is diametrically opposed to the transmission and radiation of natural heat, it being equal in transmission, in refraction, and radiation, as we know full well that without depressing the Vines in a house started in or after March we have a result in breaking, in vigour, and in produce in inverse order to that above stated. The placing of the pipes at the sides or fronts of houses appears like what Mr. Pearson once said of walls—seeking warmth at a bonfire—one side roasted and the other cold, which, applied to the case in hand, would mean the Vines from c to d would soonest feel the effects of the artificial heat, it would be considerably lessened in temperature from d to e, and less again from e to f, whilst the moisture would be greater in d to e, and more abundant still in e to f, but the most moisture would be found in the mass of cold air, or rather the moisture ascending in the heated air would be condensed by the glass in part, by the back wall, and be present most in the atmosphere beneath the dotted lines from the heated surfaces to d, e, and f. The temperature must also be more equable at the lower part of the house, for by giving air by the top ventilator (g) the heated air is let out, and cold will rush in by the same orifice to supply the vacuum caused by the air-giving.

To avoid a recurrence of the evils above alluded to, ventilation by the front or side lights has been suggested, and in more than one instance adopted. It is well known that by admitting top air we let out the heated air more quickly—lower the temperature more rapidly than were ventilation admitted by the front or sides, the upper ventilators being closed. This new principle of air-giving is certainly of a date that would in this age be entitled to be termed old, for I can remember pinneries and vineries with very inefficient upper ventilation, all the front or side lights being made to open by the slide-past system, these being very much more resorted to than the cumbersome top-sliding lights. In admitting air by the front or side lights in the first instance it is certain we make the most of the artificial heat, the object being to admit fresh air with-

out diminishing the temperature, and make the most of the solar heat by retaining it instead of letting it escape by the opening of the upper ventilators, or only to let pass an excess of temperature beyond which it would not be safe to allow the temperature to rise. This side ventilation I take as proof of the wrong disposal of the heating surfaces, and cannot but look upon the admission of air in unheated houses, or those moderately aided by artificial heat, as other than that the top ventilation, whilst it allows the escape of heated air, permits of a rush in of cold. The former defect may be remedied by an equal distribution of the heating surfaces instead of concentrating them along the sides and fronts, and the other so that the cold air may not be by a raised light as g, be forced in at the rate at which it travels, but by a more equal distribution of the means of ventilation—the cold air passing over the openings,

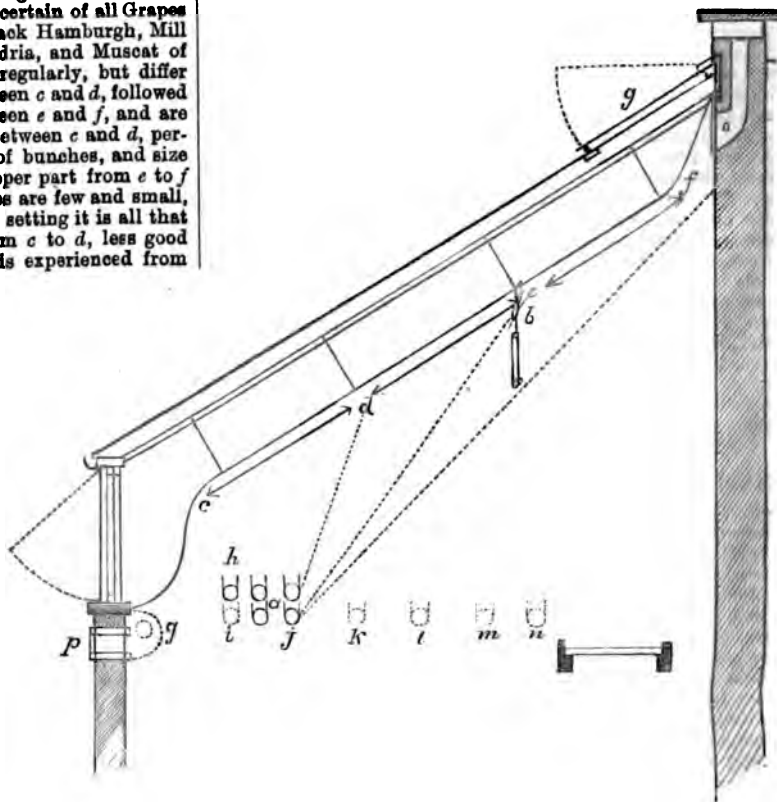


Fig. 99.

or by a lantern light so as to blow through. In most cases the necessity for front or side ventilation vanishes as assuredly will heated air by every opening it can pass, but more rapidly by upper than side ventilation.

To return to the section, fig. 99. It appears under-heated; the pipes in cold weather have to be maintained at the highest point practicable in hot-water heating. Add two more pipes, h and i, and the result will be different. Of course, but it is only adding heat where we have already too much, the necessity for front ventilation being made more imperatively needful to subdue its drying influence on the Vines between c and d. I do not question that by front ventilation the atmosphere would be so modified as to give e and f an advantage equal to c and d; but I take exception to having the pipes at one side or both sides, and consider the six pipes disposed as shown in i, j, k, l, m, and n, would give a more equable temperature and attendant moisture, the necessity for front ventilation before top would be void, and the recourse to the remedy of a defect made necessary by wrong disposal of the heating surface would not cause us to commit another almost as bad, for such in my opinion is the admission of side air before upper. It is wrong in principle, and that which necessitates it must be wrong also.

This departure from the orthodox system of placing the pipes over each other, the flow being the upper, and the lower the return, is, I am glad to say, now being very generally

practised—i.e., the pipes placed on the flat, having two advantages—converting the pipes into all flows, there being no descent until the pipes leave the house on its return to the boiler, and the heat is spread more approaching the equalisation of the heat given by nature. Spread the pipes, the heat will be equalised in proportion; and increase the flow, not that the boiler will heat any greater extent of pipes with the same fuel, but that the pipes may be more of an equal heat throughout their extent.

Just a word about admitting air in periods of prolonged cold dull weather. Various means have been suggested—some by means of enclosing a portion of the heated surfaces in sheet iron perforated with an opening or openings to the external air, to be shut or opened at will, fresh air being thereby admitted and warmed before it mingles with the air of the house. A singular plan this of freeing the house of vitiated air. Not a doubt but that the fresh colder air will cause a disturbance of the atmosphere, force the air out somewhere—in proportion as that coming in so will be that going out, and is just going on the same whether we have air entering through a casing to a hot-water pipe or not, for I do not see the value of such inventions unless the vitiated air is got rid of by openings at the upper part of the house, which, in proportion as the heated air passes out, so will air come in to take its place. No improvement in this particular has been made upon the principle of Atkinson, letting out heated air by openings in the back wall as shown at *o*, and admitting air in front, *p*, the air so admitted having to pass the hot-water pipes (this is an addition to Atkinson's plan), *q*, it being enclosed in a casing of perforated galvanised iron or zinc, the air being regulated by sliding doors, the openings being as continuous as practicable, or as the stability of the walls admit.—G. ASHBY.

THE BLANKNEY MARROW PEA.

I HAVE grown the Grotto or Blankney Marrow Pea for thirty years for a main late crop, and consider it one of the best-flavoured Peas in cultivation. It is a green Marrow, growing between 6 and 7 feet high, the pods having a rough mossy appearance, and would not take on an exhibition table. The peas are medium-sized, of a beautiful green, and the pods well filled; it is a continuous cropper on good cool soil. Peas fit for table can be gathered and the plants be blooming at the same time. This Pea is a great favourite with my employer, and we have never been without a good sowing of it for the last thirty years.

I find I obtain the best crop by sowing in February or March. Late sowings are not so productive in England; but in deep soils in Scotland with more moisture than in England I have seen splendid crops from sowings made in April, May, and beginning of June.

Amongst our many excellent Peas this will hold its own amongst the best of them. I do not suppose that it will ever be a favourite amongst market gardeners, as the roughness of the pod is against it; for the same reason it will not be much prized on the exhibition table, but on the dinner table it has few superiors.—D. LUMSKY, *Blazholm Hall Gardens*.

EPIDENDRUMS.

THIS is a very extensive genus of orchidaceous plants, the different species of which may be numbered by hundreds; but perhaps not one-tenth of the number are worthy of culture. They are all stove epiphytes, and under culture in our hothouses succeed for the most part best on blocks; but a few of the large species take more kindly to pots. There are but few species that require a high temperature, the cool or Mexican house being the proper place for them.

One of the most desirable species to grow is *E. prismatocarpum*. It succeeds either in an ordinary stove with the temperature at night of from 55° to 60°, or in the Cattleya house. Pot culture suits it best, and the pots must be three parts filled with clean potsherds, placing over them a layer of sphagnum moss, the plant being potted in a compost of equal parts of turfy peat, sphagnum, and potsherds. Like the Cattleyas it has a season of rest when but very little water is required. When it is making its growth the roots must not be allowed to become dry. As soon as the growth is complete, if the bulbs are sufficiently strong the flower spikes come out from the top of them in the same way as Cattleya flowers are produced. This is a very distinct and choice Orchid; there are several varieties of it.

E. vitellinum and *E. vitellinum majus* are two fine Orchids which succeed admirably in the cool house with a temperature of 45° during the winter months. There is a marked difference between the two: the *majus* variety has not only larger flowers, but the pseudobulbs that are formed this season will not throw up a flower spike until the year after, whereas *E. vitellinum* throws up its pseudobulbs in the summer and the flowers are produced on the top of the growths at once. Indeed nearly all the *Epidendrum*s produce their flower trusses from the top of the pseudobulbs. Mr. Day of Tottenham has a very healthy lot of plants of the large-flowered variety, and his gardener Mr. Gedney grows them remarkably well in a lean-to house facing north. They are grown on blocks or baskets suspended close to the glass.

A valuable quality possessed by these plants is the long-continued freshness of their flowers. One plant of the small-flowered variety continued in full flower for three months last year. The colour of the flowers is a rich orange scarlet with a deep yellow lip. There is considerable variation in the colour of the flowers.

When in full growth the plants can scarcely be over-watered if they are rooting freely. If desirable both varieties may be grown in pots, but less water will be required than if the plants are grown on blocks.—J. DOUGLAS.

A SELECTION OF PINK BEDDING GERANIUMS.

"J. W. B." recommends Mrs. Haliburton as a pink bedder. Without saying anything as to the merits or demerits of that variety, let me strongly advise any who wish to increase their own interest in their garden and to elicit praise from others to try a few more varieties of shades of pinks instead of the eternal scarlet. Mrs. Lowe, a light pink; Florence Durand, lilac pink; Amaranth, deep lilac, still retain their supremacy in their colours; but there are others of a deep pink colour of Mr. Pearson's, as Contessa Quarto, Mrs. Ffytche, Augusta Miles, and above all as my type of a bedding Geranium, Mrs. Holden. Then, again, Mrs. Turner, Mrs. Musters, Mrs. F. Penni are all beautiful in their respective shades of pink, though some run very near to others. Christine I have long since discarded as utterly useless. Master Christine is very good and an undoubted improvement. Mrs. Upton is unsatisfactory. By the way, the old Rose Bendaier ought still to be used in many places as a very telling colour in the distance.

While speaking of bedding plants I want to record the value I set upon a *Lobelia* called Alpha, which I had sent me from the raiser for trial, and which I gave a very good test to last year. It is, I fancy, a seedling from Little Gem and has a cross of species in it. The colour is a pure deep blue; the plant is free-blooming, with a good short habit of foliage, and making good foliage before blooming, which is a very valuable quality with *Lobelias*.—O. P. PEACH.

MESSRS. W. OLIBRAN & SON'S NURSERY AT ALTRINCHAM.

THIS, known as Oldfield Nursery, is about eight miles from Manchester. It is about seven acres in extent, and contains many Conifers and about twenty thousand Roses. Fruit trees are also cultivated; Pears, Plums, Cherries, Peaches, &c., are well trained and in good health, such trees as gardeners like to procure.

Herbaceous and spring-flowering plants are specialities of this nursery, Daisies, *Myosotis*, *Aubrietias*, *Arabis*, *Polyanthuses*, double and single *Primroses*, are grown here by many thousands, the demand for these plants being extensive. Florists' flowers, such as double *Pyrethrums*, *Potentillas*, *Delphiniums*, *Pentstemons*, *Phloxes*, *Antirrhinums*, *Carnations*, *Picotees*, and *Pinks*, are also extensively grown, and *Violas* are deservedly rising in public favour, most of the best and newest kinds being found here.

Yucca filamentosa variegata, not often met with in large quantities, are plentiful here. The true old double crimson *Primrose* is also here, or was, for the demand has been so great that the proprietors have been obliged to stop its sale. Six acres of land have been taken for American plants, the demand for them being very great. No shrubs endure the smoke near Manchester better than *Hollies* and *Rhododendrons*.

The glass department is rapidly extending, nearly 20,000 feet of houses and frames having been erected. The houses are

not of a pretentious character, having evidently been built with a view to economy and usefulness. Almost all are low span-roofed houses, 100 feet long by 10 to 15 feet wide, with divisions in the centres. A large heated shed for packing, &c., runs along the ends, so that all the houses can be entered without having to step out in the open air. This plan economises labour, and is doubtless a great advantage to both plants and man.

In the stove I noted a good stock of *Dracenas*, including several of the newest varieties. *Epiphyllums* are here grown in large numbers worked on the *Pseckia* stock—portable plants with good heads. Vines for forcing and planting are here grown largely. Zonal *Geraniums* are grown in large numbers, and most of the newer varieties are to be found here. In another house I noted a healthy stock of *Pelargoniums* of the show, fancy, and early-flowering sections. *P. Queen Victoria* is here in quantity. *Lapageria alba* is thriving well with very cool treatment.

The trade of these nurseries in flowering and softwooded plants is very widely spread, plants being sent to all parts of the United Kingdom daily either by post or rail. That a large trade is done by post may be judged from the fact that a ton of cardboard is annually made up into boxes and sent away. Although tin boxes are stronger they are not used here on account of their weight, and the per-centage of breakage with cardboard does not exceed a half per cent.—W. W.

EXHIBITION OF CLEMATISES

AT THE ROYAL BOTANIC SOCIETY'S GARDENS, REGENT'S PARK.

There are now arranged in these popular gardens in the new corridor Messrs. Jackman & Son's collection of Clematises, which will prove one of the most pleasing exhibitions of the season. Our readers may form some idea of what this noble collection must be when we say they completely fill the corridor, broken-up by new shrubs and evergreens, also some very nice-trained creepers, such as *Vitis heterophylla variegata*, *V. purpurea*, *Ampelopsis japonica*, *A. bipinnata*, &c. The corridor is upwards of 300 feet in length, and the specimens number nearly four hundred, ranging from 2 to 5 feet in height, many being 3 feet and more through, most of the plants being in full flower; some of the specimens have sixty flowers now open.

Of new varieties we noticed Prince Alfred of Edinburgh, a fine bold flower from 6 to 7 inches across, sky blue with white bars running through the petals, making it have a very chaste appearance; Marquis of Salisbury, dark maroon, a quite distinct variety; Vesta, the best of the whites; Sir Garnet Wolseley, a magnificent specimen and one of the most striking in the Exhibition; Lord Mayo, a fine light variety with large blush flowers; Countess of Lovelace, a fine double variety, a much better flower but after the colour of John Gould Veitch. Of the older varieties Fair Rosamond, a very nice primrose-scented kind, in fine flower; Aureliana, a fine delicate mauve purple; Mrs. C. S. Baker, a very pleasing kind; Lucie Lemoine is a fine double variety with very pretty blush flowers; The Queen, a delicate lavender or mauve-like tint; and many others that should be seen to form an idea of what a variety of tints there are to be found in this fine collection, which we hope will draw many visitors.—J. P.

FRUIT PROSPECTS.

Our southern brothers of the spade need not envy their northern ones, for though we had a promise of an abundant fruit year in this part of Yorkshire (Olevaland) the severe weather of the second week in April, following, as it did, a week of very fine weather, has made such a difference as to turn cheering prospects into apparently hopeless by the severe frost of April 12th, when the thermometer fell to 15°. After a time we may form an estimate of the injury done and calculate future prospects by present appearances.

Apricots were well set, but they were almost everyone frozen, blackened, and have since fallen. The hardest seems to be Blenheim or Shipley's. There will be the barest sprinkling of Royal and Moor Park, also Oullin's Early Peach and Kalsha; but St. Ambrose with Moor Park on a south-west aspect not being so forward as those on a south aspect promise fairly.

Peaches and Nectarines had the corolla and the stamens and pistil singed, and are dropping off. They cannot be other than few and far between, as it is only those which being set had extra protection, or late blooms, that we can expect to have any from.

Plums promise well; even trees which were heavily loaded last year give fair prospects. Some trees on a south wall have had the bloom injured and it is falling, but the standard and

pyramid trees are only just coming into flower now, April 27th. Blackthorn or Sloe has not yet made itself conspicuous by its profuse white blossom. This will show that we lie high and cold. That very excellent Plum Prince of Wales, which exhibits such a tendency to debility and premature decay, I may say succeeds admirably on a west aspect. Young trees of various kinds heavily fruited last year are bare of promise this.

Pears show abundantly, and being later have not apparently suffered any injury from the severe weather, though the tips of the leaves and the almost expanded trusses of bloom were more or less blackened. Exceptions are trees heavily cropped last year.

Apples, especially those on the dwarf stock, are fuller of bloom than last year; but old trees on the Crab, which cropped more heavily last year, have no more than a fair show, yet the young trees on that stock promise well.

Cherries if bloom is an evidence should be abundant.

Gooseberries have at least one-third the fruit destroyed, which is perhaps well, as they bore unusually heavily last year, and promised to improve upon it this. Red Currants are in the same plight as the Gooseberries—fully a third of the crop destroyed, but still enough remains for a crop. Black Currants appear to have escaped, the prospect being very cheering. Raspberries have some of the shoots blackened, still no great harm has been done to them; and as to Strawberries they are not only no worse from a cold spring, but are certainly the better of a wet autumn and winter, and will, from the fullness of the crowns and trusses appearing, be good.

Altogether northern fruit prospects, notwithstanding the wet, snow, and frost, stand fair for a full average, especially in that most useful national kind the Apple.—YORKSHIRE GREENING.

BLOXHOLM HALL,

THE SEAT OF THE RIGHT HON. R. A. C. N. HAMILTON.

MR. HAMILTON's name is familiar in garden literature. His position as a large landed proprietor in Scotland and England, and the high character of the gardening which is carried out at his different establishments, justly entitle him to be included amongst the patrons of horticulture. His garden in Scotland has been made famous by the high-class practice of Mr. David Thomson and the practical lessons resultant on ornamental gardening. Than Ardeerfield few gardens occupy a higher position for their superior keeping and for their admitted floral attractiveness. They were fully described on pages 8 and 22, vol. xviii. If Mr. Hamilton's Scottish establishment is typical of the ornamental character of gardening, his English seat at Bloxholm is not less noteworthy for the useful practice which for many years has been carried out by Mr. David Lumsden. It is from Ardeerfield primarily that Mr. Hamilton is provided with floral decorations, Bloxholm supplying the more substantial requirements for his London mansion. In meeting these requirements Mr. Lumsden's steady aim has been to produce the best hardy fruit and vegetables that were producible, and the success that he has achieved has won him far more than local fame. In the district in which he has resided for more than a quarter of a century he is held in the highest esteem for his integrity and ability, and in general regard he occupies the same honourable position. Being the first winner of the "Carter" challenge cup, and having second place in the competition next following, he has done more to win that trophy than any other gardener, well as it was won by the present possessor under the changed conditions which the great firm found it necessary to adopt. Mr. Lumsden is also a medalist of the other great firm of Messrs. Sutton & Sons, and he holds also the Royal Horticultural Society's medal for the finest collection of Potatoes that has, perhaps, ever been exhibited. A notice of Bloxholm, therefore, both as being owned by a gentleman who has done so much to encourage practical gardening, and as being managed by a gardener who has achieved more than an ordinary measure of success, can scarcely fail to possess some interest to readers of garden literature.

Bloxholm is situated in the agricultural county of Lincolnshire, and is about twelve miles south of the city of Lincoln and five miles north of the clean and thriving town of Skefford. The locality of Mr. Hamilton's seat is not picturesque, the country being generally flat, but the land is fertile and well cultivated. Bloxholm formerly belonged to the Thornton family, one of whom lost it by speculating in the South Sea

scheme. It was afterwards purchased by a late Duchess of Rutland, passing to General Manners, and subsequently to Lady Mary Hamilton. The mansion, which is spacious and substantial, is pleasantly embosomed amongst and surrounded by fine trees, and overlooks extensive prospects both westward over the heaths and eastward over the fertile fen district. The gardens are tolerably extensive, and although principally devoted to culinary products, they are not devoid of ornamental features. The pleasure grounds contain fine timber trees, and evergreens, especially Yews, grow with great luxuriance. There is also some statuary, which is conspicuous by the relief afforded by the dark background of foliage; and one object in stone—somewhat inconspicuous, being almost hidden by the evergreens, but one which most visitors stop to examine—a Chinese god, the god of destruction, but harmless enough in his "leafy bower."

On the lawn are some very good Conifers, which, though not closely planted, are sufficiently so to form a sheltering

boundary to the flower garden and the pleasant walks surrounding the mansion. There are some excellent specimens of *Pinus cembra* 80 feet high which Mr. Lumsden planted from 6-inch pots in 1852, also healthy examples of *P. pinsapo* of the same age and size, and several large Cedars and Junipers. *Pinus Morinda* received injury by late frosts, and from the same cause Deodars cannot flourish. There are some large Tulip Trees, a good specimen of the Lucombe Oak, and a weeping Camperdown Elm.

Surrounded by lawns and trees of the character named we find the flower garden, an enclosure of considerable extent, and in which the "ancient and modern" system of decoration is well blended and carried out. From the mansion, which is elevated on a stone terrace, a flight of steps descend to the walk which intersects the enclosure. On each side of this walk is a chain of flower beds, also at intervals good-sized specimens of *Thuja aurea*. The beds near the walk are "bedded-out" with the usual spring and summer bedding

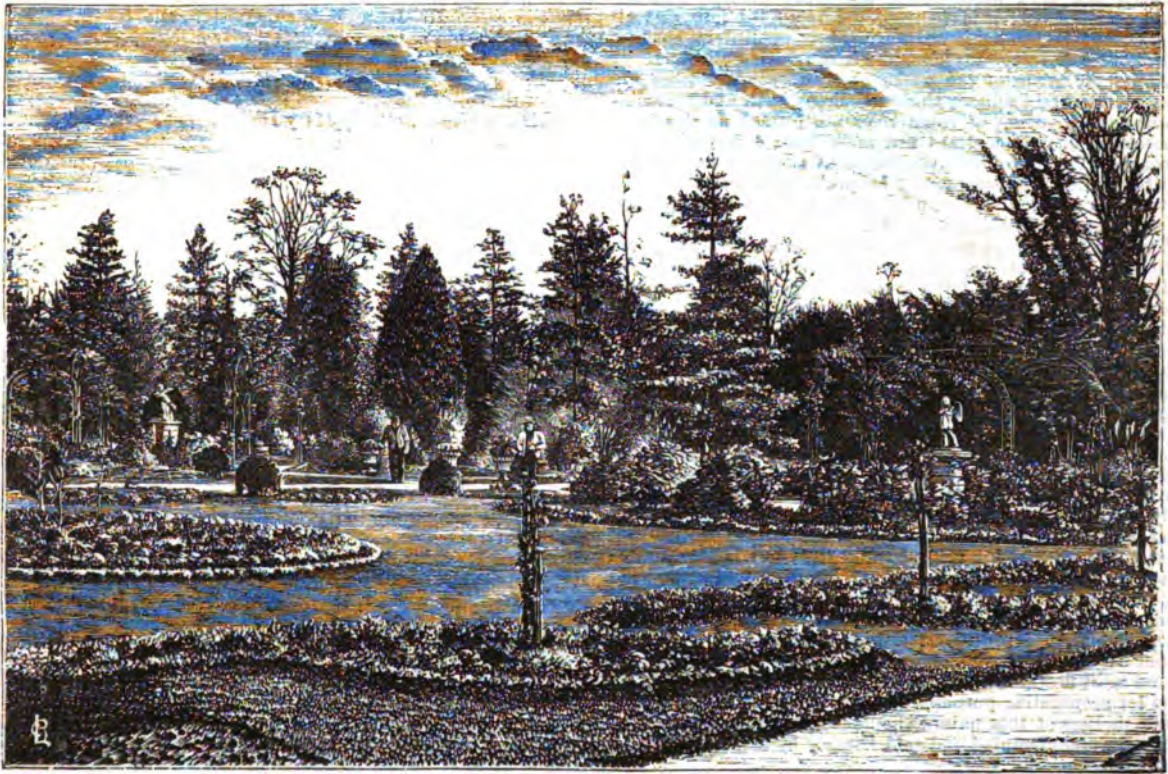


Fig. 100.—THE FLOWER GARDEN AT BLOXHOLM HALL.

plants. In the two divisions formed by the walk are very large beds with statuary in the centre, around which are planted climbing Roses trained in the form of festoons. These beds are planted with Hollyhocks and Dahlias, and these plants in large masses have a fine effect in the autumn from the windows of the mansion. In other beds are shrubs and large clumps of herbaceous plants. Thus the marginal beds are bedded-out annually, the beds more distant containing plants of a more bold and permanent character. As Bloxholm is regarded by its owners principally as a resting-place in their journeyings from Scotland to London in spring, and back again in autumn, Mr. Lumsden endeavours to have the garden gay at these periods, and the endeavours of a gardener so able and diligent have but one result—success. This garden, both in spring and autumn, is attractive without being sensational, its arrangement and the mixed mode of decoration blending admirably, and producing an effect bright, varied, and enjoyable. The engraving represents a view taken crosswise of the flower garden.

A short distance from the mansion is a sunken bowling green of about an acre in extent and surrounded by evergreens, this being occasionally enjoyed by the tenantry and their friends during the absence of the family in summer. With

this portion of the ground is connected a pleasure-ground walk two miles in length, partly encircling the park, and returning by a long sweep to the mansion. Such is an outline of the ornamental features of Bloxholm. It is a garden of quietude and repose—colour not predominating, but is sufficient to present an element of cheerfulness and affords a pleasing change to the gaiety, formality, and glitter of "high-life" and "first-fashion" flower gardening of the present day.

We now enter the useful department, the kitchen gardens, and a glance is sufficient to find that the practice carried out here is of the first order, perfect cleanliness, cheerful neatness, and thorough management pervading the enclosures. There is about five acres between the walls. The latter are lower than we usually find them, and are well covered with trees, the Pear trees especially being very fruitful. A mode of renovating old Pear trees may be mentioned. It has been carried out successfully by Mr. Lumsden, and may be useful to others whose trees require renewal without baring the walls. The branches are trained horizontally 9 inches or more apart. When these cease to be profitable every alternate branch is sawn out, leaving the mains 18 inches and more distant from each other. The summer growth, or some of it, on these

branches is not pinched, but shoots at about intervals of a foot are allowed to grow, and are trained downwards and made to cover the spaces formerly occupied by the large branches. These young growths are not trained at right angles with the branches producing them, but are trained obliquely, their points being directed to the trunks of the trees. In this way the appearance is good, robust growth is arrested, young wood is provided, and excellent crops of fruit are produced.

The south wall is covered with Peaches and Apricots, the trees being efficiently protected in spring by canvas placed on rollers, the arrangement being very simple, the blinds being worked easily and expeditiously. From the top of the wall projects board copings; under these copings are fastened eyes or sockets in which the rollers work to which the blinds are fastened. At the bottom of the blinds, which reach nearly to the bottom of the wall, other rollers are fastened, at the end of each being a grooved wheel. By drawing the cord the roller rises to the top of the wall, where it is fastened, and on being released the cord winds round the grooved wheel and the blind comes down; it is then secured to a fixed lath, and all is safe. It is the same system that is applied in shading greenhouses in some nurseries, and is simple and effectual.

Along the sides of the walks excellent espalier trees are trained, and besides these there are many bush and pyramid-trained trees. Many of these trees are pruned as closely as Gooseberry bushes, and are not more than 4 feet high and through. They have been so pruned as adapting them to the position which they occupy, and for probably twenty years they have produced excellent crops of fruit, and the trees are now in anything but a debilitated state.

The vegetable crops produced in this garden receive special attention, the greatest quantity combined with the best quality being the steady aim of the grower. Asparagus is grown in beds, also in single rows, the single-row system being the best, but the plants need securing against the wind in summer. Seakale is largely grown, tree leaves alone being used to force the produce, manure imparting to it an unpleasant flavour. The Kale produced by leaves being also superior by its sweetness and delicacy of flavour to that forced in the Mushroom house. Lettuces are also grown extensively, the demand for them, especially early in the season, being very great. In order to facilitate the supply of this important salad crop Mr. Lumsden employs home-made protectors, which are admirably adapted for their purpose. They are easily made, and are neat in appearance. These protectors are formed of inch deal boards, the back board being 11 and the front board 9 inches deep. These are fastened together by cross pieces, and are grooved near the upper edges for securing the loose squares of glass which slide in from the ends and form a roof. The miniature frames are about a foot wide, and in lengths of about 6 feet. They are easily removed where required, and are found most useful for protecting Lettuces, Peas, Radishes, &c., also for propagating purposes and the saving of seeds. Handy glass shelters of this nature should be found in all gardens. They are manufactured and sold cheaply by makers of garden requisites.

Potato culture at Bloxholm is a work of special importance. About seventy varieties are grown, which are prepared and cultivated with great care. The ground is deeply trenched, and at planting time a mixture of wood ashes, vegetable soil, and a little superphosphate is sprinkled in the drills. This induces a free growth, and is promotive of clear skins on the tubers. The strong growers are planted 4 feet apart, and the weaker-growing sorts 3 feet, and winter crops of Broccoli, &c., are grown between them. Mr. Lumsden cannot grow Potatoes satisfactorily at less than the above-mentioned distances apart. For high quality and general usefulness the Early Ashleaf Kidney, Lapstone or Ashtop Fluke, Dunbar Regent, and Paterson's Victoria are regarded as the best sorts, and follow each other in the order named. For exhibition purposes the following twelve sorts are recommended by Mr. Lumsden:—Bounds: Bector of Woodstock, Paxton's Wonder, Porter's Excelisior, The Bloomer (earliest), Model, and Paterson's Victoria. Kidneys: Prince Teek, Birmingham Prize, Snowflake, Fenn's Bountiful (red), Fenn's White Kidney, and Jackson's Superb.

A little remains to be said on the glass structures. These are not extensive, but are well occupied. The conservatory is a large old erection. It contains Lapagarias and other climbers, flowering plants in good health, and moveable screens of Ivy-leaved Geraniums, which are placed in the mansion when the family is in residence. The plants are growing in ornamental

boxes, the plants being on flat trellises 4½ feet high and 3 feet wide. There is a lean-to house about 40 feet in length for bedding plants and Strawberry-forcing, the Strawberry mainly relied on being Garibaldi. There is also a wall of Apricot trees 50 feet in length covered with glass, and three span-roofed houses for forcing fruits and vegetables. In one of these is a collection of Rivers' Peaches in pots, the sorts most esteemed being Early Alford, Early Crawford, Early Beatrice, Magdala, and Falcon. The next house is devoted to Figs. White Marcellines never fails to produce three crops during the season. Brown Turkey is also cultivated, also Negro Largo, which is a variety of great promise. The next house is mainly occupied with Kidney Beans, Tomatoes, Cucumbers, and table plants. The most useful forcing Bean is Sir J. Paxton, being early, free, and in colour a deep green. There is also a length of about 200 feet of brick pits for early-vegetable-growing, with several dung frames for the production of early Potatoes.

Such is an outline of the gardens of Bloxholm, which reflect superior management in every department. Besides the care of the gardens, the farm and the general management of the estate is under Mr. Lumsden's supervision, and he has given long proof of his ability to satisfactorily discharge his several duties. It is pleasing to note the comfortable and ornamental cottages which—yes, adorn the estate, and also gratifying to hear of the active interest taken in the comforts and well-being of their occupants by Lady Mary Hamilton.—J. W.

ASPECTS OF NATURE.

APRIL.

"The mead is our study, and Nature our book."

DURING the spring months Nature's garden, whether in copse or meadow, by the sparkling brook or on the sunny hedge-side bank, is at its best; during April

"The bloom is in the bud, and the bud is on the bough,
The earth is grown an emerald, and heaven a sapphire now;
The Primrose and the Daisy wild are laughing everywhere,
And the balmy breath of opening buds steals softly through the air."

We have still with us the earliest spring flowers

"that come before the swallow darts,
And take the winds of March with beauty;"

and a host of others that open day by day to the warm kisses of the April sun and the gentle showers which generally fall so copiously at this season.

Foremost among all the favourites of wood or glen comes the Primrose, which decks the copse, the hedgebank, and the river's brink, pushing forth its rich green leaves and delicately scented pale but bright blossoms (which have given a name to colour) from amid the rustling, brown, dead Oak leaves which have strewed the copse since autumn and formed a shelter to the plant during the cold and frosts of winter.

During this month one of the prettiest sights in rural England may be seen where the sturdy woodman is felling the trees, letting in light and the warmth-giving rays of the sun on the flower-bedecked ground of the copse. In such spots the finest Primroses are generally to be found, and frequently in their near neighbourhood the delicate leaves of the Wood Sorrel will be seen. The bright light green of its folded foliage, with the purple tint beneath, is as beautiful and unique as are the small delicately-pencilled flowers of this pretty wilding, which is so small as to be often passed unnoticed, but which is of great value in chemistry, yielding as it does the crystalline acid salt called oxalic acid, which is often sold under the name of essential salt of lemons.

In the same locality with the Primrose and the Wood Sorrel we may come upon a patch of the graceful Wood Anemone—the Windflower of the poets—a plant which we have found growing profusely in the corner of an open exposed meadow, many yards of soil being carpeted with its beautiful star-like blossoms and dark green deeply-out leaves, the former opening every petal to the sun, and closing and drooping at every passing cloud.

Above the lowly flowers that grow so close to mother earth a tangled bower of Honeysuckle and wild Rose, the Woodbine and Eglantine of poetry, may now be seen each pushing forth its foliage of different tints of green; the first of a bluish hue, almost glaucous in comparison with the grass, or yellow, green of the second.

The pale sweet flowers of spring already mentioned woo our affections by their delicate beauty, and are associated in our minds with the sweet perfume of the early white and purple Violets, which appear as capricious in their choice of a habitat

as the Wood Anemones. We have found them growing in the greatest profusion along the whole length of a narrow strip of grass at the foot of a churchyard wall at Tilehurst in Berkshire, and so early in blossom that we have gathered a handful before the end of February; yet the most diligent search on every bank or other likely situation save this one spot went unrewarded by a single bloom.

While the delicate blossoms and sweet scents of the woodland flowers win us to love them for their very tenderness and fragile beauty, the Marah Marigold commands our admiration for its bold splendour, where it makes the meadow adjacent to the streamlet or river a very field of cloth of gold, richer in colouring and more wondrous than the one on which Harry the Eighth met his French rival.

The *Caltha palustris* must surely be the "Cuckoo buds" of Shakespeare, for he says—

"When Daisies pied and Violets blue,
And Ladysmacks, all silver white,
And Cuckoo buds of yellow hue,
Do paint the meadows with delight;"

although we have always looked upon the pale flowers of the *Cardamine pratense* as the true Cuckoo-flower, whose opening blooms heralded the coming of the bird. Indeed, in the north of England the plant is known only by the name of Cuckoo-spit, the rather inelegant cognomen being gained no doubt from the fact of almost every flower stem having deposited upon it a frothy patch much resembling the human saliva, in which is enveloped a pale green insect. Few north-country children will gather these flowers; they have a superstition that it is unlucky to do so, and will tell you with the gravest countenance that the cuckoo has spit upon it while flying over.

Trailing along the bank, which is starred with the flowers of the *Ladysmuck*, we shall doubtless see the beautiful blue *Periwinkle*; and in rare spots in the south of England find a meadow which has become the home of the little-known wild flower, the *Fritillaria meleagris*, the wild Tulip of the cottagers. Adjacent to the Kennet and Avon Canal, about a mile and a half from the town of Reading, there is a meadow which during the latter part of April is entirely studded over with these curious Chinese-lantern-like flowers, the chequered dark-coloured bells being found in much greater profusion than the white variety, although there are a fair number of the latter growing on a tall stalk with scarcely any leafage—none in fact, save a grass-like blade to each stem. The pretty pendulous flower hangs from its slender support, and aways in every breeze.

The *Fritillaria* is suggestive of Fairydom and Puck's pranks; it might have formed a fitting hiding-place for the tiny sprite—a shelter from inclement weather; or a canopy for Oberon when he sat in state. In airy gracefulness of growth we know of no native flower to equal it save the wild Harebell, which comes later in the season to cover our heaths with beauty. Both flowers are eminently suggestive of fairy bells; a lightly-held bunch of either will tinkle as they are carried in the hand, recalling to mind poetic allusions to the shimes of the good people and the sports of the elves at the court of Titania, whose "starlight mirth" would have found a suitable arena in a meadow thickly set with *Fritillarias* and sheltered by high hazel-planted banks.

In April the wryneck, the *avant courier* of the cuckoo, returns. Mary Howitt, who sings so sweetly of the country and its pleasures, alludes in some pretty stanzas to the name given to this little bird by the country children—

"'Pee, pee, pee,' says the merry pee bird;
And as soon as the children hear it,
'The cuckoo's a-coming they cry, for I heard
Up in the Elm the merry pee bird,
And he'll come in three days or near it.'

"The days go by, one, two, three,
And the merry bird singeth, 'pee, pee, pee,'
Then on the morrow 'tis very true
They hear the note of the old cuckoo."

Before the month is out the "household-loving swallow" will have returned, and will give life and animation to many a rural scene as it skims over the village green or darts as quick as thought after its insect prey.

Now is the season when the cottage homes of England peep out from a garland of blossom; the Cherry, the Plum, the Pear, and the Apple are in full beauty this month; as an enthusiastic American lady once told us, she had travelled from Liverpool to London in the spring, and appeared to be journeying the whole time through one large highly-cultivated garden.

The forest trees—the latest lingerers—begin to don their summer dress in welcome to April's fickle smiles, and before May is with us we shall have the young, rich brown, bursting foliage of the tardy Oak to form a contrast to the various shades of green now so conspicuous in the distant woods, or clothing with beauty the hedges and trees in close vicinity. —T. S. J.

TWO-DAY ROSE SHOWS—AURICULAS, &c.

I CAN fully endorse the statement made by "T. H. G." as to the inconvenience of two-day Rose shows, and I am exceedingly grieved at the decision of the Crystal Palace people to hold theirs on two days.

Singular to say, as soon as I read the notice that the admission on Saturdays was reduced from half-a-crown to a shilling I felt convinced that the Sydenham people would keep our Show open for two days.

But what can we exhibitors do? We all look upon the Crystal Palace as the Derby day, and a first prize won there as the blue ribbon of Rosa's court. We can write and protest, but I am afraid no notice will be taken of our grievance. As Mr. Gould says, Roses that have been cut for two days and for one day exposed to the glare and heat of a crowded exhibition room or tent are quite over by the evening of the first day, and for them to be exposed to another day's sunlight is really cruelly not only to the Rose but to her owner. The expense, too, is so considerably increased while the prizes are the same, so that it is a very unfair arrangement. But in spite of all we must show at the Crystal Palace.

Some time since I read a letter in our Journal—I think from my friend "D., Deal,"—about Auriculas, in which he stated that certain exhibitors had (in order to get their blooms out for the April Show at South Kensington) placed the plants in their greenhouse. Now I have hitherto failed egregiously in cultivating the Auricula. All my plants gradually died, and I bought very fair ones too. Last autumn I procured a fresh lot and placed them in the only glass house I have, which is nothing but a small forcing pit, and there the Auriculas have done very well. Heat is only applied in case of very severe weather.

I never saw (I am ashamed to confess it) Auriculas at an exhibition, so I do not know what is considered a fine truss of bloom; but my Colonel Champneys had five very fine pips on one truss, and I fancy that is a fair number. I obtained a most wonderful bloom of one pip on Miss Giddings, a green-edged variety.

With regard to Auriculas I must tell how splendidly the Alpine varieties do here out of doors. I bought a lot of seedlings, and planted them in front of my church where no wind but the south could come near them. They grew all the summer and now are in fine bloom. They certainly are most beautiful flowers for the garden as well as for pot culture.

May I ask any of your readers to tell a poor ignoramus like myself, without laughing at me more than they can possibly help, whether they have ever tried the other kind of Auriculas (green-edged, &c.) out of doors? and whether, if they were protected by bell-glasses from heavy storms of rain and wind, they think there would be any chance of their succeeding? I know from experience one of the common self varieties will bloom out of doors, but have never seen any of the choicer sorts.

Camellias are in bloom now (April 21st) in my churchyard, and Azaleas are covered with bloom buds. This is very wonderful considering that ice $1\frac{1}{2}$ inch thick was picked up here on Good Friday. By the way, an old woman here told me that she had noticed all her life, and her father had told her that he had done so too, that we never have warm weather till after Easter. Let that great festival fall early or late, it made no difference; there was no warm weather till it was over. Have any of your readers ever heard or noticed the same?

Concerning new Roses, I hear grand accounts of Duchesse de Valambrosa and Triomphe de France, particularly the latter, which is said to be an improved *Marquise de Castellane*. If it really turns out to be so, then France will have given us one grand new Rose in 1876. I have just bloomed a plant of Anna Olivier, a Tea Rose. My friend Mr. Cranston induced me to buy a dozen plants of it last autumn; and as he sent them in pots they were put in the forcing pits. The flower is a most beautiful one, a little like in the bud what I believe Madame Lacharme is supposed to be when she is at home.

Mr. George Paul speaks of it also as being most promising; and as we have so very few good Teas I thought I would name it to my Rose brethren in the hope that if they do not possess the plant they will possess it, and if they have, that they will let me know what they think of it.

Ah! when will the best time arrive when we shall have a first-class white Hybrid Perpetual, a snow-white Charles Lefebvre? I remember once at Hereford a gentleman said to Mr. Cranston, "Why do you go on bringing out fresh Roses? surely you have all you want now!" looking at his wonderful stand of 1872. "All we want!" said the Hereford giant, "why we have no really good white Perpetual yet." The best white H.P. Rose I ever bloomed was Louise Magnan. It is a Rose which I believe has quite gone out of cultivation. "A bad opener" was the fiat which ultimately condemned her to oblivion, and yet I have never myself had or seen such a white Rose. I bloomed it under glass, and at Easter placed it on my chance screen, and even here, in this retired place, it created quite a furore. The bloom was snow-white in colour, globular, built up like Pierre Notting is when very fine. The oldest catalogue that I have is one of Mr. George Paul's for 1871, and in this it is described as white tinged with flesh colour, large and full, a bad opener, growth moderate.

I think perhaps we do not give new Roses a long-enough trial. Before we finally discard a Rose we should let it have at least a three-years trial. As an instance in point, in all probability Madame Marie Cointet would have been discarded if Mr. Bennett had not electrified rosarians by the box of blooms which he brought last year of that Rose from Stapleford to the Crystal Palace. I shall never forget Hercules' face when he told me of those blooms, and how he had not one plant of it. Now Cointet as a bloom ranks with Madame Bothschild, though, alas! she has none of the latter's robust qualities, being a wretched grower.

The cuckoo was heard for the first time here to-day (April 21st), so that we may hope for more genial weather now. The letter from Mr. Ingram in our Journal concerning the severe weather was most interesting. We surely may hope now that May will prove a warm month, free from night frosts, and worthy of her name, "the merrie month of May."—JOHN B. M. CAMM.

MAY I be permitted a small space in your columns to add my quota and fully endorse all that has been so ably written by "T. H. G." and others on this subject? There are, of course, cases where Roses are exhibited at miscellaneous two-day shows in connection with agricultural meetings and such like, where it is unavoidably necessary that they should stand over the second day. But anyone accustomed to exhibit at or visit such shows on a hot June or July day knows full well what miserable objects they very frequently are long before the close of the first day; and a cut-Rose show pure and simple continued more than one day is in my humble opinion a most ridiculous absurdity, and in these days of strikes and unions I think a few of our leading nurserymen and amateurs would do well to unite and at once oppose such a growing evil, first by memorialising the managers of shows that have already made such arrangements and announcements; failing redress to refrain from exhibiting at all such meetings, which are neither more nor less than pecuniary speculations, carried out to a certain extent at the expense and great inconvenience of exhibitors.—AN EXHIBITOR.

DESTRUCTION OF RED SPIDER.

I AGREE with one of your correspondents that painting the pipes is useless as an antidote, and so far as my experience teaches sulphur used in any form is not fatal to the red spider.

Some twelve months ago Mr. Douglas stated the result of an experiment on ainery, when by heating the sulphur-painted pipes to an extent so as to cause a thin vapour in the house, he found all the spiders killed. I can hardly doubt that a gardener of his experience could have been mistaken, but it would appear from an experiment tried on a Melon frame by myself that sulphur vapour has no effect. It was a two-light wood frame, badly infested with spider. After the fruit was cut I had iron plates heated to nearly a red heat placed inside the frame, and flowers of sulphur east over some, and others painted with sulphur paste, until the frame was nearly full of vapour. I admitted a slight chink of air during the whole process. An hour afterwards I examined the plants, and found the spider as lively as ever, and the

leaves apparently uninjured. I then again filled the frame with sulphur vapour, and kept it close all night, expecting to find both plants and spider killed, but neither was so. The plants had suffered a little, but not the enemy; a few young Doeks and wild Sorrel that had come up amongst them were singed.

I then placed a pan of burning sulphur inside, and left it for several hours. I found that the old Melons were entirely burnt up, but the spider still remained rampant on the dead foliage. That concluded my experiments for that time, and also ended my hopes of destroying the spider by means of sulphur.

I intend trying the sulphur and lime recommended by a correspondent, and will state the results. I hope some other readers will contribute their experience, as in my own opinion this is a subject that still requires much consideration. I am aware that vigorous healthy growth is an excellent fortifier of plants against attacks of the red spider; but plants or Vines are frequently not found so, nor can they be put in that condition in a magical space of time. I am also cognisant of the fact that abundant syringing is beneficial, but is a very troublesome process, and cannot at all times be practised. The great desideratum is a process which will banish red spider as effectually as fumigation does the aphid tribe. I have recently heard it asserted that the house being well filled with steam will destroy this pest, but I am very sceptical about it. Information from some who have practised what they state would be valuable.—LANCASHIRE READER.

INFLUENCE OF LIGHT ON THE COLOURS OF FLOWERS.

WHILE the green colour of leaves absolutely requires for its formation the action of light, there is by no means such a dependence in the colour of flowers on light. From experiments made many years ago by Sachs, it appeared that not merely bulbous and tuberous plants took quite a normal form in perfectly dark chambers and gave coloured flowers, but that other plants also produced normal flowers when the flowers only were kept in a dark space and the green leaves exposed to light. At the same time differences were now and again observed in the various plants between the illuminated and the darkened flowers, and they seemed to call for further experiment. The matter has been investigated by M. Askenasy, who has described his results in the *Botanische Zeitung*.

It was found that Tulipa Gesneriana gave in darkness quite the same flowers as in light, and the flowers of the plants grown in darkness were in no wise altered when they were afterwards brought to light, and the etiolated stems and leaves became green. The same result was obtained from Crocus vernus. On the other hand, Hyacinthus orientalis showed a distinct influence of light, and that in two ways: first, the light accelerated the development of the flowers about fourteen days; then the flowers which grew in the dark were not indeed colourless, but the intensity of the colour was less and its distribution was different from that in normal flowers. If the upper part of a cluster of flowers grown in darkness were cut off and exposed to light there was, even after one day's action, a decided increase in the intensity of the colour, and in three days the flowers were nearly as deeply coloured as the normal flowers. "It is not without significance," M. Askenasy remarks, "that the change of colour which the light here produces is independent of the previous formation of chlorophyll. The older flowers, which had been earlier produced in the darkness, did not first become green, then blue; they rather at once took a dark blue colour, and only the younger flower buds formed at first chlorophyll in the light, so that they became at first as green as the buds of the same age grown in light and afterwards developed in the same way as these."

Scilla campanulata developed in the dark normal flowers, in which the blue colour of the corolla was somewhat weaker than the uncovered specimens, while the reddish colour of the inflorescence of the normal plants was absent in the darkened ones. Pulmonaria officinalis, on the other hand, developed its flowers in darkness from the flower buds quite normally; and also in the darkness the change of colour proper to this flower passed from red to blue, but the flowers that were developed later were more weakly coloured.

Further experiments were made with Arohis ustulata, Silene pendula, Antirrhinum majus, and Prunella grandiflora, and

the results were similar to those that have been described. The author makes the following remarks in conclusion:—"The experiments here described show that many flowers need light to acquire their normal colouration, while others can dispense with it. Wherein lies the ground of this difference does not yet appear, and numerous further experiments will be necessary before the phenomena can be reduced to order. In most of my experiments the individual flower-bearing shoots were brought entirely into the dark. Objection might perhaps be taken on this score to the value of such evidence, and the phenomena observed be partly attributed to defective nutrition; but the experimental plants were in all cases perennial growths furnished with many subterranean parts, which of course contained abundant quantities of reserve material; there were also present, in most cases, numerous unopened shoots in connection with those in the dark, and which could bring nutriment to the latter; still I did not give special care to this point. But, above all, the fact was to me decisive, that the flowers formed under exclusion of light presented a normal size and form. Under such circumstances it would be a highly-forced view to attribute the absence of colouring matter to defective nutrition."—(*English Mechanic and World of Science.*)

NOTES AND GLEANINGS.

We are told that the Nottingham and Midland Counties ROSE SHOW and HORTICULTURAL EXHIBITION will be held in the Nottingham Arboretum on the 6th, 7th, 8th, and 10th of July, and that a liberal schedule of prizes is in course of preparation.

THE celebrated annual display of RHODODENDRONS AND OTHER AMERICAN PLANTS from the nurseries of Messrs. John Waterer & Sons, Bagshot (which for upwards of twenty years formed such an attractive feature at the Royal Botanic Gardens, London), will this year be held in the grounds of Manley Hall, Manchester, the property of Ellis Lever, Esq., and from the present appearance of the plants it is confidently expected that the display of bloom will be such as to excel all previous exhibitions of the kind.

PINK APPLE PLANT NURSERY, ST. JOHN'S WOOD, has been purchased by MESSRS. E. G. HENDERSON & SON, of the neighbouring Wellington Nurseries. The two nurseries were founded by branches of the same family, and the head of the Wellington Nurseries firm, Mr. E. G. Henderson, is another testimony to the healthfulness of the gardening profession, for he is in his ninety-third year. Perhaps writing about gardening also promotes longevity.

To ascertain whether the COLOUR of RAIN GAUGES has any effect on the quantity they retain, M. Wild recently made some experiments—first, by pouring equal quantities of water into three gauges, one of which was painted black, another white, while the third was not painted, exposing them on dry days, and observing after some time the quantity of water in the gauges. The black gauge had lost a quantity of water corresponding to 0.07mm.; the white, 0.09mm.; the blank, 0.52mm. In a second series of experiments the falling rain was measured in the black and white gauges. It appeared that there was a difference of about 1 per cent., the black-painted gauge showing less rain than the white. But since rain gauges, even when near one another, differ in their indications, M. Wild considers that the influence of colour of gauge is, at least in one (German) climate, extremely small.

THE stomata of the leaves of plants are generally found on the under side, and it is commonly supposed that they could not perform their essential functions if they were exposed to direct sunlight. It is sometimes stated that if such leaves were turned round and compelled to remain in this position the plant would die. An American observer, Mr. Meehan, has noticed effects which seem to require a modification of this view. On a small tree of Maple (*Acer pseudoplatanus*), grown from seed and three years old, the leaves were in the reversed position. At first they had been normal, but they had turned round. In a young Oak the leaves had a vertical position, and this is also the case with a great number of Proteaceae and Myrtaceae of South Africa and Australia, the *Eucalyptus globulus* being the best example; and it is said these leaves have stomata on both sides, and that through the effort of these organs to turn to earth there is vertical equilibrium, and neither side has an advantage. But the case of the

Maple cannot be thus explained, and the stomata were found only on one side, and that the normal.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

So far we have been able to work constantly in this department, and the usual routine work has been well brought forward. The ground is perfectly dry on the surface, but a very few inches underneath it is very moist. We have been planting out Cauliflower plants for succession. The plants were raised under glass, but from being carefully exposed to light and air from the first and gradually hardened off they are very stocky plants. We have not watered them at all, although the appearance of the ground on the surface would seem to justify us doing so. It may be as well just to make a remark on watering in passing. Those who have not had much experience in garden work are too free with the water-pot early in the year, and they are not always sufficiently careful as to how they apply it. In every case the ground should be examined a few inches under the surface, and if it is quite moist water should not be applied to plants newly put out, even if the weather is fine at the time; in the course of ten hours or less wintry weather may set in with snow or hail in flowery May, and the small fibrous roots suffer. It is a good plan to mulch the surface of the ground with rotted frame manure, and should any freshly-planted crops flag let them be syringed overhead two or three times until they are established.

We have been hoeing and placing sticks to second crops of Peas. The earliest, William I., is showing blossom, but the crop will be poor owing to the persistent way in which the sparrows have attacked them this season. They are safe under the pea-protectors at a time when they are most attractive to the birds, and generally they are left alone when the protectors are removed and the sticks put to them; this season they ate the leaves after the Peas were a foot high. We have made a sowing of late Peas, and will sow again about the middle of the month.

A sowing of Broccoli may also be made at this time. The whole of the Brassica tribe suffer from what gardeners call the club. The maggot which is the cause of this may be destroyed by trenching the ground 8 feet deep when this is possible. Gas lime is also said to be obnoxious to this pest of the kitchen garden. Brussels Sprouts may be both sown and planted out. Salsify and Scorzoneria may be sown if not done in April. We have pricked-out Celery in a sheltered place, allowing 8 or 4 inches between the plants; also hoed and thinned-out Onions and Carrots, leaving a space of 4 or 5 inches between the plants. Beet has been sown in drills about a foot apart, and summer Spinach between the rows of Peas. Vegetable Marrows and Gherkin Cucumbers should now be sown in pots on a hotbed. When the plants have the seed leaves fully developed they should be potted singly in 48-sized pots, and when the plants are sufficiently large they should be planted out under hand-lights either in the open ground or on a dung bed. When the plants have filled the lights the top may be removed. All sorts of small salad that may be required should be sown in succession, and after this time of the year it should have a shady position. Turnips sown now will be ready for use towards the end of July. Dwarf Kidney Beans and Scarlet Runners may also be sown now, the former from 2 to 2½ feet apart and the latter 4 feet 6 inches. Amongst new sorts the Canadian Wonder is a most excellent Dwarf Kidney Bean. Any spare time may be devoted to hoeing the ground between all growing crops, and ground that may still be lying vacant should either be hoed or forked over.

Melons and Cucumbers.—These do very well in frames after this month without being at much pains to cover the frames at night or to watch the ventilation during a biting east wind with alternate sunshine and shade. The beds should be well made with properly worked stable manure and leaves in equal proportions. The foundation of the bed should be raised upon a foot or 18 inches of rough faggots, as, unless there is a hollow space underneath the manure, the heat from any linings that may be applied to the frame does not penetrate the bed. If the heat has not quite fallen to a safe point some turf may be laid over the bed to keep down the heat before putting in the usual compost. A proper size for a one-light Melon or Cucumber frame is 4 feet by 6, the light to be 4 feet wide; a two-light frame would be 8, and a three-light 12 feet long. For a frame this size one plant should be put out in the centre of each light on a hill, and when the growths have covered the hill the remainder of the space should be filled-in with fresh compost. If the weather is hot and the nights warm the plants may either be syringed or watered overhead daily. Should the nights be cold cover up with mats.

In Melon houses where the fruit is setting the night temperature should be 65° and the atmosphere only moderately moist. We generally dispense with all evaporating troughs in forcing

houses when fruit is setting. The lateral growths should be stopped two leaves beyond the fruit. A moist atmosphere is most suitable when the fruit is swelling until it shows signs of ripeness, when a dry atmosphere is proper for bringing up the flavour. Some sorts have a tendency to crack, and the dry atmosphere prevents this to a certain extent. Scarlet Gem is more liable than any other, but this may be managed by cutting the bine leading to the fruit about half through.

PINE HOUSES.

A house of Queens that was started in January, and where the fruit is now of considerable size (though none will be ripe until early in June), is kept at a high temperature to get the fruit in; there is no difficulty to get the temperature up to 90° in the afternoon, and if the sun sets upon the west end will stand at this temperature until six or later. When such is the case it does not require much artificial heat to maintain a minimum of 70° or 75°. With this high temperature a fair supply of atmospheric moisture is necessary, but too much moisture causes the crowns to increase too much in size. We never syringe overhead, but the surface of the bed and under part of the plants is occasionally moistened. A little air is admitted at the top of the house at six in the morning. As the plants are plunged in a moist bed of tan they do not require much water. We look over them twice a week, and alternately water with weak manure water. At one time we used to put up moveable shadings, and they were used in very hot weather, but the last two or three seasons no shading has been used at all; and to prevent the ripening fruit from being injured by bright sunshine, a sheet of paper is laid lightly over it for a few hours at midday.

Succession plants that were potted in March are also being encouraged by heat and moisture to make rapid growth. Plenty of air is admitted to ensure a stocky growth. Broad short leaves is what we aim at with all the varieties; long narrow leaves shows bad culture. If good suckers can be obtained now and potted in 6 and 7-inch pots, plunged in a brisk bottom heat and encouraged to grow freely, in six or eight weeks the pots will be filled with roots, and the plants may then be shifted into their fruiting-pots; Queens and Jamaicas into 10 and 11-inch, and the stronger-growing sorts, such as Cayennes and Charlotte Rothschild, into 12 and 13-inch. With good management they will grow to a fruiting size and be well established by the end of September, and after two or three months' rest may be started into fruit early in the year to produce full-sized fruit in a little more than twelve months from the time of putting in the suckers.

PLANT STOVE AND ORCHID HOUSES.

All large specimens of hardwooded plants are now being carefully looked over for scale and mealy bug. Both pests may be found in the points of the growing shoots, and they must be removed with caution, else the tender leaflets receive much injury. If any bug gets into the centre of trusses of *Ixoras* the appearance of the plants will be quite spoiled. *Ixoras* revel in a high temperature—70° to 75° at night; syringe daily overhead, and if the pots are well filled with roots water freely. Ornamental-foliage plants that are making their growth also require attention; the leaves must be kept clean and healthy, else the plant loses much of its value. Red spider is very troublesome to *Alcoasias* and some species of *Palms*; it must be looked for at this season and be destroyed at once. Young plants potted in March are now again ready for repotting, and they will have a liberal shift. Plants in flower ought to be placed in a cooler house than that where growing young specimens are; 55° at night is high enough for the former, while the latter require from 65° to 70°. Many *Orchids* require repotting, and they will be attended to as time permits. Many species of *Cattleya* are now repotted. The best time to do it is just before the plants begin to make fresh roots. An *Orchid* when at rest ought not to be disturbed. If any of the species are potted at a time when there is no root-action the chances are that the plant will be much injured, and may not recover again for many years. We have so frequently described the material and manner of potting, that to enter into it again at this time would be a repetition of what has been previously stated. Many of the summer-flowering species are now showing for bloom, and they must be carefully watched to prevent slugs from eating the buds. Red spider and thrips must be carefully watched for and destroyed on their first appearance.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

ALEXANDRA PALACE. Flowers, May 5th and 6th. Roses, July 7th and 8th. GLASGOW. May 10th, and September 12th and 13th. Mr. F. Gilb. Doughall, 167, Canning Street, Sec.

WESTMINSTER AQUARIUM. May 10th and 11th, May 30th and 31st, July 5th and 6th.

CRYSTAL PALACE. Flower, May 19th and 20th. Rose, June 16th and 17th. TIVERTON. May 24th and 25th. Messrs. A. Payne and J. Mills Hon. Secs.

UNDERCLIFF. May 31st. Mr. T. H. Clough, Hon. Sec.
MANCHESTER (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.
SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fudge, 89, York Street, Sec.
SOUTH ESSEX (LITTON?). June 18th. Mr. G. E. Cox, Wilmet Road, Leyton, Sec.
IPSWICH.—June 15th, July 6th, and September 17th. Sec., Mr. W. B. Jeffries, Henley Road, Ipswich.
EDINBURGH (Scottish Pansy Society's Show). June 16th. Mr. N. M. Welsh, 1, Waterloo Place, Edinburgh, Sec.
COVENTRY. June 19th. Mr. T. Wilson, 8, Portland Terrace, Sec.
MAIDSTONE (Roses). June 21st. Mr. Hubert Bensted, Rockstow, Maidstone Sec.
FARNHAM AND SOUTH HAMPSHIRE. June 21st. Mr. H. Smith, Sec.
SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.
EXETER (Roses). June 23rd. Mr. T. W. Gray, Hon. Sec.
BRIGATE (Roses). June 24th. Mr. J. Payne, Treasurer.
BURTON-UPON-TRENT. June 25th. Mr. F. S. Dunwell, Sec.
LEEDS. June 28th, 29th, and 30th. Mr. James Birbeck, Delph Lane, Woodhouse, Leeds, Sec.
WEST OF ENGLAND (HEREFORD). Roses. June 29th. Rev. C. H. Bulmer, Credenhill, Sec.
RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.
FROME (Roses). June 29th. Mr. A. B. Baily Hon. Sec.
WIMBORNE (Roses). June 29th. Mr. C. Parker, Hon. Sec.
OXFORD (Roses). June 30th. Mr. C. B. Ridley, 115, Aldate's, Hon. Sec.
BROCKHAM (Roses). July 1st. Rev. A. Chasles and Mr. C. Mortimer, Secs.
MARENN. July 1st. Mr. J. H. Edmondson, Hon. Sec.
ROYAL CALDESIAN HORTICULTURAL SOCIETY. July 6th and September 19th.
SOUTHPORT. July 5th, 6th, 7th, and 8th. Mr. E. Martin, Sec.
NEWARK (Roses). July 6th. Mr. F. B. Dobney, Sec.
HILDESBURGH (Roses). July 15th and 16th. Mr. J. Mitchell, Sec.
WIMBLEDON. July 15th and 16th. Mr. P. Appleby, 5, Linden Cottages, Hon. Sec.
KILMARNOCK. Roses, July 18th and 19th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.
TONBRIDGE. July 19th. Mr. W. Blair, Hon. Sec.
WRETHAM. July 25th. Mr. J. B. Shirley, Hon. Sec.
HEADINGLEY. July 26th and 27th. Mr. T. Atkinson, Burleywood, Headingley, Leeds, Sec.
BRIGHOUSE. July 29th. Messrs. C. Jessop & E. Rawnsley, Hon. Secs.
HEWORTH (Horticultural). August 2nd. Mr. R. H. Fiske, Hon. Sec.
RAWTENSTALL (ROSEDALE). August 4th and 5th. Mr. M. J. Lonsdale, Sec.
TAUNTON DEANE. August 10th. Mr. F. H. Woodforde, M.D., and Mr. Clement Smith, Hon. Secs.
FLINT. August 11th. Hon. Sec., Mr. Walter Fisher.
CLAY CROSS. August 15th. Mr. J. Stallard, Clay Cross, near Chesterfield, Sec.
WESTON-SUPER-MARE. August 15th and 16th. Mr. W. B. Frampton, Sec.
PRESTON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.
SHERWORTH. August 16th and 17th. Admits & Naunton, Hon. Secs.
MIRFIELD HORTICULTURAL. August 19th. Mr. George Senior and Mr. John Rushforth, Hon. Secs.
NEWBY. August 22nd. Mr. Henry Seymour, Hon. Sec.
RAMSGATE (ISLE OF THANET). August 23rd. Mr. E. B. Schartan, Broadstairs, Sec.
SHATON BURN. August 26th. Mr. R. Richardson and Mr. W. Elliott, Secs.
DUNDON (International). September 7th, 8th, and 9th. Mr. W. R. McAlvie, 26, Euclid Crescent, Sec.

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

AUTUMN FLOWER SHOWS (*Monitor*).—You will find lists in our numbers published last autumn. It is impossible to form an opinion of a Violet from two small leaves.

MARKET GARDENING (*J. K. Leith*).—If you read Outill's "Market Gardening Round London" and our "Garden Manual," both small and cheap, you will obtain the needed information.

GENUS NARCISSUS (*J. F.*).—A monogram by Burbridge & Baker, published by Beves & Co.

ANTS (*J. T. S.*).—Continue to sprinkle Scotch snuff over their runs daily until they disappear.

FRENCH VINE CULTURE (*S. A. P.*).—We know of no system differing from some one that is adopted in England. There is no book answering to the description you give.

CUCUMBER SEEDLINGS (*F. G., Taplow*).—Some of the plants are very large, but there are none so distinct from those well known to merit naming. The petals are thin and notched at the ends.

APRICOT LEAVES MILDWEED (*O. S.*).—The mildew probably arises from the trees in pots being too much shaded by Vines or other trees, and the ventilation being deficient. We cannot name plants from leaves only.

BETTERIES ON VINES AND PRACHES (*Balsall Heath*).—They are weevils, known to entomologists as *Othiorhynchus picipes*. To subdue them place a white cloth beneath the trees and shake them. No, is the answer to your other two queries.

CUCUMBERS DISEASED (*Dot*).—We fail to see any disease upon the small undeveloped leaf you have taken from the point of a shoot. The specimens of fruit sent are all right so far. If the fruit dies off when it is the size of that sent, it is either from the temperature being too low at night, or from

a portion of the roots being destroyed from some cause or other. We have seen overwatering do it. Keep the house 68° at night, or if the plants are in a frame over a hotbed place mats over it at night.

GARDEN VASES (A. G. S.).—The cast-iron flower vases figured at page 306 may be obtained from Andrew Handyside & Co., Britannia Iron Works, Derby, and 83, Walbrook, London, E.C.

VINE AND FRUIT LEAVES BROWN (T. B. E.).—We have frequently had our vine leaves the same as those you have sent—indeed, very much more affected. It is caused by too much moisture in the atmosphere. A little more air and less moisture will prevent it in the future, but there is no harm done. The Peach leaves have been eaten by some maggot or caterpillar before they were fully developed. If most of them are as bad as those sent the check to the trees would be sufficient to account for the fruit falling. If only a few have been injured the cause must be sought somewhere else. You may nothing of the treatment they have received, so we cannot suggest anything; but it may be from the roots being out of order.

LYCASTE SKIMMIE CULTURE (Constant Reader).—This plant succeeds best in the cool Orchid house, or it will do in a cool stove amongst other plants. When its growth is completed the plant must be kept moderately dry at the roots, and if it is necessary to repot the plant it should be done just before it begins to grow. Drain the pot well; it ought to be rather more than half full of clean drainage; over the drainage place some sphagnum moss. The compost should be half sphagnum and the other half fibrous peat, with a few potsherds to keep the compost open. Water the plant freely at the roots when the pseudobulbs are in the course of formation.

MULBERRY TREE IN TUB (M. D.).—The fruit sent will not be large, but when the tree is better established it will be larger. It will not be necessary to have stiff soil for it; the Mulberry does well in sandy loam. If the fruit is very numerous you may thin it. The Mulberry belongs to the Linnaean order Monocotyledons—that is, the stamens are in one flower and the pistil in another, but all are on the same tree. It will not be necessary to set the fruit artificially.

CROWN IMPERIALS NOT FLOWERING (A Lady in Cheshire).—We can only account for the plants not flowering from the soil being poor. Probably the roots are disturbed, which may, from weakening them, account for their not flowering; but with the enriching of the border the plants will probably attain sufficient strength for flowering, they having light and air and not being disturbed. The plant flowering may have a moister and better soil.

GROUND IVY UNDER EVERGREEN SHRUBS (Y. Y.).—It will not injure the shrubs, but give a neat covering to the ground. It may be destroyed by hoeing and raking off, but which will do the shrubs more harm than the Ground Ivy, as the hoeing will destroy the surface roots. All our shrubs are upon grass, which is gone over two or three times during the summer with scythes, sickle, or hook, cutting off any growth of the grass or weeds likely to interfere with the growth of the shrubs, and this has a much better appearance than bare earth.

SOIL FOR TACSONIA VAN-VOLXHEMI (T. L. C.).—Fibrous loam two parts, and one part each sandy peat and leaf soil, with a free admixture of sand, about a sixth, the whole well mixed and broken up moderately fine, but not sifted.

ASPECT FOR CHAMPAIGN DEVOYNIERS ROSE IN GREENHOUSE (Idem).—Either an east or a south wall will answer, but preferably the south. Plant out the Rose by all means; it will grow much more freely and sooner cover the space, giving bloom accordingly.

PRIMULA CORTUSOIDES ANGEA CULTURE (A Constant Subscriber).—It is not at all difficult to cultivate. We have had it for the past six weeks in fine bloom, many plants now being very handsome. We can only account for your plants not flowering from their being weak. We do not place our plants outdoors at all, but keep them in the greenhouse constantly in a light airy position. After they begin to grow they are well supplied with water until the bloom is past and the plants begin to lose their leaves, when they are placed in a slightly shaded situation and occasionally watered to keep the soil from becoming quite dry, otherwise the soil is dry during the resting season. It is one of the freest-flowering and best of Primulas.

LIFTING LILUMS FROM OPEN GROUND (Idem).—It is mainly recommended as a succession to those grown in pots. We, however, have no difficulty with them under pot culture, and all the difference in time of flowering is due to the heat to which the plants are subjected. You may plunge the plants outdoors in ashes, the pot on a slate as you propose, and remove to the greenhouse for flowering.

TULIPS ARRIVING AT FULL SIZE (Idem).—If you mean from seed, they usually attain the flowering or full size in the fifth year, but some do so in the fourth year.

BORDER FUCHSIA (A. B. G.).—There are two equally common, Fuchsia coccinea and F. Riccartonii.

FLOWER BORDERS (A. B. C.).—In the ribbon border discard either the yellow Calceolaria or scarlet Geranium. If you retain the Calceolaria then substitute a second line of Oleander for the Geranium. Put the Alternanthera next the grass, and the Golden Pyrethrum in a second row behind it. Then you will have—1, Dahlias; 2, Oleander; 3, yellow Calceolaria; 4, Oleander; 5, blue Viola; 6, Golden Pyrethrum; 7, Alternanthera amabilis. Or you may have—1, Dahlias; 2, Oleander; 3, variegated Grass; 4, scarlet Geranium; 5, blue Viola; 6, Pyrethrum; 7, Alternanthera. In the chain border take—1, white variegated Geranium; 2, scarlet Geranium; 3, dwarf blue Ageratum; 4, Oleander Verschaffelti; 5, Geranium Crystal Palace Gem; 6, dwarf blue Ageratum; 7, scarlet Geranium; 8, white variegated Geranium. Or, 1 and 8, Oleander; 2 and 7, Geranium Crystal Palace Gem; 3 and 6, Ageratum; 4, scarlet Geranium; 5, white variegated Geranium. If you have a pink Geranium it would prove much more effective in this border than a scarlet variety. The treatment of Cyclamen periculum will be explained in our next.

TORRADO SMOKE AND YOUNG CUCUMBERS AND VINES (Young Gardener).—With a proper material and moderation in application no injurious results follow.

STOPPING VINE SHOOTS (Idem).—The shoots should be stopped two joints beyond the bunch, or, if the leading shoot, allow it to grow to within a foot of the top of the house or space it is to occupy, and then take out its point. One bunch only ought to be allowed to each shoot.

SELECT TREE CARNATIONS (J. S.).—Princess Beatrice, Princess Christian, Empress of Germany, Marchioness of Westminster, Monsieur Baldwin, and Le Grenadier. We know of no really good yellows excepting two, both of which are Piotees—viz., Asot Yellow and Prince of Orange. To have tree

Carnations flower in winter they require to be kept from flowering during the previous summer, and need a temperature of 50° to 55°, and a light airy house. In an ordinary greenhouse we have flowers late in autumn, and in spring up to those of another class in the open ground coming in.

WATER FROM A BARREL STOCKHOLM-TARRER (A Subscriber).—We have no experience, but always take the precaution to burn out the tar before using the barrel, and which charring renders the barrel more durable.

GLOXINIAS IN GREENHOUSE (Idem).—They succeed in a greenhouse, but require to be started in a hotbed in March or April, and grown-on until advanced for flowering, after the middle of June succeeding well in the greenhouse. They should be kept in winter in the pots in a place safe from frost and dry. Propagation is effected by cuttings and by leaves, which require heat as that of a hotbed, with shade from bright sun. Seed may also be sown in a hotbed in March.

SEEDLING GERANIUM (A. F. G.).—Truss very large, but all the petals were shed; the leaf good, but there are many similar.

PANSY (I. T. H.).—Pip fine, but there are too many of the same colour for anyone to identify it.

BEDDING PLANTS (A Subscriber).—Any of the leading florists near London could supply all those named by Mr. Cole.

ROSE TREES CANKERED (J. E. E.).—"The invisible enemy" is the unfavourable soil or subsoil. The roots do not supply a sufficiency of sap to sustain the growth. Remove the soil from over the roots, and fill the vacancies with equal parts loam from a pasture and decayed stable manure. Water plentifully in dry weather. This treatment may procure a late production of flowers even this season, and enable the trees to provide for next year's produce.

INSECTS ON SHOOT OF PLUM TREE (J. A.).—Being uncertain as to the tree from which the sprig sent was obtained, we can only suppose that the vast congregation of minute specimens of a Coccus belong to C. Pruni of Burmeister. Wash the shoots with hot soap and water or with weak methylated spirit.—I. O. W.

NAME OF FRUIT (H. H. C.).—It is the Loquat or Japan Quince, Eriobotrya japonica.

NAMES OF PLANTS (J. H.).—The Grape Hyacinth, Hyacinthus botryoides. (G. D. P.).—We cannot name your Asalea. It is a florists' variety.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY CLUBS.

We have often noticed how a few energetic fanciers will work-up a breed, and bring it almost from obscurity to become well known. This has happened lately with the Black Cochins, and is now going on with the Leghorns. It is quite surprising to notice how many fanciers there now are of this previously uncultivated breed, and how quickly the variety is finding a certain place in many shows. And now we hear of the Leghorn admirers starting a Leghorn club, and selecting a committee with a veteran and faithful fancier as president, and a most energetic poultry-lover as honorary secretary. We believe that these fanciers have put on foot a great undertaking, and that the time will yet come, even in these days, when poultry fanciers are legion and shows are cropping up in every town and village, when we shall look back upon the work which the Leghorn fanciers inaugurated, and be grateful for it.

We confess we believe in clubs, because we think they afford all people with certain fancies to meet together and talk over their hobbies. In starting such clubs we would make the annual subscription very low, not more than 5s. at most, so that the members may be many, and consequently the opinions and original thoughts many. It would be a mistake in starting clubs to charge an entry fee and a heavy annual subscription, for they would bar the very people from joining whom we want—very interesting, and has great charms no doubt for people in all grades of society; but it is our friends who are not so rich in worldly goods that we want to see enrolled on all sides in our fancy; and those are the people we want to find in our clubs, and so it is important to keep the expenses down.

Now, we should like to see several clubs started, one among Dorking fanciers, and another among Cochins, and so on, and then one more for the various breeds—that is, for those breeds which cannot individually support a club, among which we would number Sultans, Silkies, Frizzles, and such less known breeds. Surely we can find some energetic fancier like Mr. Kitchen in the ranks of most varieties, who would put their club on a good working basis. The rules cannot be too simple and too few, and the work should be carried on with the least possible labour and expense; and then we should like one great mother club, to be called the "Great Britain National Club," to which everyone belonging to a branch club should be able to belong without paying any fee, so that being a member of a variety club at the same time would make everyone a member of the mother club. Now, such an institution could have a grand annual meeting at one of the Palaces, where they could talk the doings of the fancy over, and criticise even the various journals if they liked. Perhaps the mother club would want a paid secretary, and we do not hesitate to say such an one could be found who would fill the office satisfactorily, and then every one of the smaller shows could pay so much a-year from their receipts in proportion to the number of their members to

defray the cost of a general secretary. Once such a scheme was properly put on foot by energetic, well-known, and loyal fanciers, and the subscriptions arranged so as to bring the clubs into the range of all, we should see no more of those infamous awards where hens take prizes at show after show instead of pullets, where a bad and wrong award is repeated at place after place to keep up a former award made in mistake, of cock Pigeons taking prizes as hens, of champion cups being awarded to unworthy specimens. We say, were such clubs but started under the wing of a national club in whose muster roll were the real and loyal fanciers, they would check all these unpleasant doings, for from their very numbers—from their enormous power which that number would consequently afford them—they could choke out all such abuses. We do not mention what else they might do—how they could arrange schedules, bring out new and good men as judges, which abound if only they were properly brought out, arrange the proper proportion of prize money to the various breeds—we say nothing on those subjects, because they should be apparent to all.

We are fully aware that poultry clubs have been started before, or that a general poultry club has been proposed, and that no permanent success has ever attended them. And we believe the reason was, either because they were not started by the right sort of people, or else that the fancy had an idea that at the root of the affair some private end was to be attained. Now, for a club of the sort we should like to see there should not be even a breath of suspicion of any such underlying purpose; should be nothing more nor less than a general enrolment of all fanciers with a nominal entry fee; but members should of course be balloted for, and it should be for the purpose of airing and ventilating opinions about awards, prizes, cups, and in fact poultry matters generally; and the smaller branch clubs such as the Leghorn Club, or any others which might be made, would, we are sure, help on the meeting of the mother club all they possibly could, for without such assistance no real good could be attained.

We would never recommend an exhibition being held by the club. It is not necessary. The two great London meetings, and those of Birmingham and Oxford in the midland counties, would afford ample opportunities for fanciers to meet together and talk about the business and affairs in general; but as we stated before, the grand annual meeting should be held at one of the Palaces where fanciers of all sorts and grades are wont to meet.

We have been asked for our opinion on poultry clubs, and we give it, and any help that we can afford which lies in our power we will very gladly grant; but we feel that before any national club is started, smaller ones for the various breeds should be set on foot to help on the movement and bring the various fanciers of the different breeds together, and then an amalgamation can be formed with a general annual meeting. But as we said before, we think all who belong to a branch club should certainly also be considered as members of the greater one without any further payment, for the money must be had in small sums from the many, not in large sums from the few, for any permanent good to accrue; and all such money collected in subscription would of course be expended upon cups, prizes, and such like, or to the help of exhibitions which fall through no neglect of their own. But these matters would, of course, be settled by the committee, in whom the clubs would put full confidence, only electing such men for the purpose as they thought up to the mark in every way.—W.

POULTRY AND BIRD NEWS.

At the coming Tiverton meeting of the Devonshire County Agricultural Society the Baroness Burdett Coutts is offering £10 in prizes in a class for undubbed Game. The first prize will be £5, second £2 10s., third £1 10s., and fourth £1. It will be interesting to notice if any of the undubbed cockerels of last year will appear again here, or whether they went home and were dubbed as soon as the meetings were over.

We hear that the celebrated Light Brahma fancier, Mr. T. A. Dean of Marden near Hereford, is going to emigrate: his adult birds were put up to auction on Tuesday last, but the chickens, which are generally this gentleman's forte, will be sold in the summer months. If the quality is as good as the birds were last year we expect to hear of some brisk bidding.

The Royal Counties, Hants and Berks, meet this year at Abingdon, near Oxford. We are glad to see their schedule has been remodelled and the Pigeons better seen to, and we understand that Mr. T. C. Burnell is to be thanked for this improvement. The Judge is not announced, but we generally find our old friend Mr. J. Baily of London officiating here.

The entries for the Bath and West of England meeting at Hereford close on Friday (to-morrow). We hope fanciers will patronise this old meeting, for we hear there is a probability of the poultry department being discontinued. We hope to attend and give our annual report.

White Call Duck fanciers wanting a class for this breed should apply without delay to Mr. J. King, 111, St. Aldate's, Oxford, for unless some help is promised, or a certain number of entries is guaranteed, we hear that this class will be expunged from their new schedule, for lovers of the breed do not support it, and last year there were only three entries.—W.

INQUIRIES.

A FEMALE Swan is now sitting. I am told she will not hatch till there is a thunderstorm. Is there any truth in this notion? —OXBURTON.

ONE of my hens lately died when her chickens were about a month old. She was in a rip on the grass. Not knowing what to do, I partially filled the rip with hay and shut them in. The next night they went in of their own accord, and have done so ever since. They do not look as well as those that have mothers, but they do not lack "gumption," and bury themselves well in the straw.—E. A.

Mr Carolina Ducks ought now to be sitting, but I cannot even find they have made a nest. Will someone help or advise me? —OXBURTON.

Is it advisable to allow Golden and Silver hen Pheasants to sit on their eggs?—BEGINGER.

ACCRINGTON SHOW OF POULTRY, &c.

THIS took place on April 27th. Turner's pens were used, and the entries in all were about 530. *Game* had four classes, and a cup was also given. In Black or Brown Reds the first was a cock good in all points but breast, which was quite clay colour. The cup was also awarded here. Second was a handsome cockerel, which in appearance we preferred to the first. Third a cock, rather thin but good in style. In next class *Duckwings* were first and third, and a Pile second. In hens Brown-breasted won all the prizes, and these were very good. In the next class first was a Black Game hen, which is faultless except in eye, which is undoubtedly too dark; second a Duckwing, and third a Pile. *Dorkings* a capital lot and all noticed. *Cochins*, Buff or Cinnamon, were all of the former colour and mostly in grand show form. One of the best pens of the Cochin classes was the first-prize Partridge, which was a truly grand pen; second were also Partridge, and third Whites. *Spanish* were good and well placed, the hens in the winning pens especially good. In *Brahmas* the first and third were Dark and second Light; the latter might have been third more correctly. Singularly *Hamburgs* were very small entries, but the few that were shown were very good, especially the first in Gold-spangled Hamburgs and the first Silver-pencils. In *French* fowls the winners were Crève-Cœur; the first generally good, but the second-prize hen was by far the best in her class. The Variety class was won by Gold Polands; Black Cochins and Cuckoo Cochins, Silkies, Malays, and White-crested Polands making up the class. In the Variety class were some cheap birds, and smart work was manifested in securing some of these. Single Game *Bantams* cocks, Black or Brown Reds, was a good class. The first Black, and second Brown Red, the latter of which we preferred to any other, being about the most perfect bird of his colour that has ever been shown; third was a grand old Black Red. In the next class first was a Duckwing of great beauty, second a Duckwing, and third a Pile which looks worse of its late work. In Black or Brown Red hens, as in cocks, we would have placed the second first, although the first was a very good Black Red, and third also of that colour. In hens of any other colour first and third were Piles, and second Duckwing, the first very hard in feather and young-looking. In the Variety class of Bantams first and second were Black, and third Laced. The awards in our opinion in the first two cases being made to earlobe, as others combining much more valuable properties were but highly commended, the class being very good.

Pigeons were a good lot, but shown in pairs, and many otherwise good were left out on account of not matching. Carriers and Fouters were, however, shown singly. In Carrier cocks first was a Dun, not in as good order as is desirable, but very good in all properties; second a Black, losing only in eye; and third also a Black. Many good birds were in low condition. Carrier hens also a large class. First a well-developed Dun, second Black with grand beak, and third Blue with capital head properties; some in both classes too well got up about the eye-wattle. Tumblers in pairs did not muster well. First Almond, of splendid ground colour and good head properties, the hen especially; second also Almond, a grand pair as regards head, but cock rather dark; and third Red Agates. Barbs were first and third Black, and second Reds. Owls were a mixed class; White Foreign first and third, and Blue English second. In Pouter cocks first and second were Blues, and third White; the first in grand order. A smart Blue was first in hens, the second quite equal except in being too grey; the third a handsome White. Fantails a fair lot, and all White. There were some

good Turbits, but many were foul-thighed and poor. First Yellows, second Reds, and third Silvers. Dragoons a good class, but showing the difficulty of matching of the hens, as a rule falling far short of the quality of the cocks, and many champion birds had to succumb on that account. First were Yellow, and second and third Blues. Jacobins were a fair lot. The first Reds—small, neat, and sound in colour; second Reds, not so good in that respect, and coarse in size; third Yellows. In Short-faced Antwerps very few came up to our requirements, but the cocks in the winning pens were grand birds, the hens being too long in proportion. First were Duns, as also the second, the former winning only by the shortness of head and general stiffness of the cock, the second being young but a grand bird, but by far the best in head properties was the third-prize Blue cock. The winning Long-faces were very first-rate Duns and Red Chequers. Nuns good, and Magpies a most exquisite lot. First and third Reds, and second Blacks. In the Variety class first were Trumpeters, and second Red Swallows.

Rabbits came next, the classes not being numerous. Lops were first. Pen 835 was a grand Tortoiseshell, but with a very crooked leg, was left out altogether, the awards being made to first a Black doe, large and good quality of ear, 22½ by 5½ inches; second Fawn-and-white, 22 by 4½ inches, in nice order; very highly commended a Black-and-white, 22 by 4½ inches. Angoras were a nice lot, the first not the largest, but of very fine quality of wool; almost every pen noticed. Himalayan were a very poor class; the first a good Rabbit, second of fair quality. Silver-Greys were, on the contrary, a good lot, many very promising Rabbits being shown, the winners very good in silvery and even in colour. In the Selling class Lops won, none others being of much note.

POULTRY.—GAME.—Black or Brown Red.—Cock.—Cup, R. Garnett. 2, W. and H. Adams. Any colour.—Cock—1, J. A. & H. H. Staveley. 2, R. Ashley. 3, H. E. Martin. *Hen.*—Cup, R. Garnett. 1, J. A. & H. H. Staveley. 2, R. Ashley. 3, H. E. Martin. **Black or Brown Red.—Hen.**—1, S. Matthew. 2 and 3, C. W. Brierley. Any other colour.—*Hen.*—1, C. W. Brierley. 2, J. A. and H. H. Staveley. 3, J. F. Walton. **Local Class.—Cock.**—1 and 2, J. Green-hall. **DORKINGS.**—1 and 2, J. Walker. 3, A. Darby. **COCHINS.—Buff or Cinnamon.**—1, J. Walker. 2, J. Booth. 3, A. Darby. **Partridge and White.**—1, T. Aspin. 2, A. Bamford. 3, J. Booth. **SPANISH.**—1, J. Powell. 2, J. Thresh. 3, J. Powell. **BRAMMAS.**—1, T. F. Ansell. 2, J. Birch, jun. 3, A. Bamford. **HAMBOGHS.—Golden pencilled.**—1, G. J. Duckworth. 2, H. Pickles. 3, W. Robertshaw. **Silver-pencilled.**—1, H. Pickles. 2 and 3, H. W. Bracewell. **Golden-spangled.**—1 and 2, G. J. Duckworth. 3, Mrs. T. E. Jones. **Silver-spangled.**—1, J. Fielden. 2, J. Fielding. 3, J. Patrick. **Black.**—1, A. Trickett. 2, R. L. Garnett. 3, H. E. Pickles. **FRENCH.**—1, C. M. Saunders. 2, W. H. Crabtree. 3, C. M. Saunders. **ANY OTHER VARIETY.**—1, W. Harvey (Poland). 2, T. F. Ansell (Black Cochins). 3, T. Aspin (Cochins). **ANY VARIETY EXCEPT GAME AND GAME BANTAMS.**—1, T. Aspin. 2, J. Birtwistle. **SELLING CLASS.**—1, J. Powell (Black Spanish). 2, T. Aspin. 3, J. F. Walton. **GAME BANTAMS.—Black or Brown Red.—Cock.**—Cup, W. F. Addie. 2, J. Fletcher. 3, G. Hall. Any other colour.—Cock.—1, G. Hall. 2, J. Fletcher. 3, R. Brownlie. **Black or Brown Red.—Hen.**—1, W. F. Addie. 2, J. Fletcher. 3, R. Brownlie. Any other colour.—*Hen.*—1, Bellingham & Gill. 2, G. Hall. 3, R. Brownlie. **Local Class.—Cock.**—1, G. Anderson. 2, J. Bamber. 3, J. Riley. **BANTAMS.—Any variety.**—1, C. J. Illingworth. 2, H. Pickles. 3, J. Walker. **TURKEYS.**—1, J. Walker. 2, J. Brookwell. 3, W. Roberts. **GEES.**—1 and 2, J. Walker. **Ducks.—Aylesbury.**—1 and 3, J. Walker. 2, C. Holt. **Rouen.**—1 and 3, J. Walker. 2, J. Newton. **Any other variety.**—1, J. Walker. 2, J. Wood. 3, H. B. Smith. **PIGEONS.—CARRIERS.—Cock.**—1, E. Horner. 2, J. Walker. 3, H. Yardley. *Hen.*—1, E. Horner. 2, J. Stanley. 3, H. Yardley. **OWLS.**—1, E. C. Stretch. 2, J. Thresh. 3, L. Lawson. **POUTERS.—Cock.**—1, W. Harvey. 2 and 3, E. Horner. *Hen.*—1 and 3, E. Horner. 2, W. Harvey. **FANTAILS.**—1, J. F. Lovelidge. 2, J. Walker. 3, T. S. Stephenson. **TURBITS.**—1 and 2, E. Horner. 3, J. Fielding. **DRAGONS.**—1, A. McKenzie. 2, Waddington & Booth. 3, J. Stanley. *Hen.*—1, W. Smith. **JACOBS.**—1, J. Gardner. 2, E. Horner. 3, J. Booth. **ANTWERPS.—Short-faced.**—1, W. Harrison. 2 and 3, W. F. Entwistle. *Hen.*—1, J. B. Bowden. **Long-faced.**—1 and 2, C. Hopwood. 3, J. Hacking. **NUNS.**—1, J. B. Bowden. 2, E. Horner. 3, W. J. Warhurst. **MAGPIES.**—1, E. Horner. 2, J. B. Butler. 3, J. B. Bowden. **ANY OTHER VARIETY.**—1, W. Harvey. 2, E. Horner. 3, D. M. Garaid.

RABBITS.—SADDLED.—1 and 2, Schofield & Barrett. *Hen.*—1, T. & E. J. Fell. **ANGORA.**—1, James & Hallam. 2, S. A. Clegg. **HIMALAYAN.**—1, T. & E. J. Fell. 2, Foster & Chambers. **SILVER-GRAY.**—1 and 2, H. Woods. *Hen.*—1, W. B. Chantry. 2, Golightly. **ANY VARIETY.**—1, Schofield & Barrett. 2, J. Woods.

JUDGES.—Poultry: Mr. Simon Fielding, Trentham, Stoke-on-Trent; Mr. Enoch Hutton, Columbarian House, Pudsey; Mr. John Martin, Patchall Park, Wolverhampton. **Pigeons and Rabbits:** Mr. J. Taylor, Rochdale; Mr. H. Hutton.

BREEDING BEES.

A CORRESPONDENT "R." wishes to know if bees are deteriorated by in-and-in breeding; and if they are, is it necessary to have fresh queens every autumn? No other bees are within several miles of his, and London is distant three days by post. Can queens be safely transported this distance? He encloses for inspection eight bees from a swarm which he bought last year as perfectly pure Ligurians. The bees are not pure Ligurians. Probably about three-fourths of their blood is Ligurian; for though seven of the eight are marked with Ligurian bands the eighth is not marked at all, and the marking on the seven is not so distinct as that on pure Ligurians.

The question of in-and-in breeding is a very important one, and deserves careful thought and consideration. It has been a subject of consideration for more than a quarter of a century, and all that we have seen in the writings of bee-masters, and all that we found in our own experience touching the question, have been carefully pondered. Many crude opinions and unsupported statements have been made to establish the idea of deterioration in bees, but satisfactory proof has never been pro-

duced so far as I know. What do we find in lone and remote districts like that in which "R." lives, and in which in-and-in breeding has gone on for generations and ages? Certainly no evidences or signs of deterioration. Bees there are as healthful and powerful as they were centuries ago. In our opinion a degenerate race of bees or an improved breed is not an established fact, but remains a mere fancy in some minds.

I will go a step farther. If in-and-in breeding be against a law of nature and tends to deteriorate the powers of bees, why do the bees of almost every hive produce drones in superabundance for the queens that are being reared in it? The conduct of both bees and drones of every hive indicates that in-and-in breeding is a law amongst them, not an exception. Though our correspondent may have fresh queens safely conveyed to him from great distances, we dare not predict that they would improve the powers of the bees in his garden or neighbourhood in the smallest degree. "R.'s" hive which contains only four or five dozens of bees will probably die, as they are rather too small a number to hatch young bees.

We answer the last question of our correspondent by naming Pettigrew's "Handy Book of Bees."—A. P.

WEATHER—HIVES—LIGURIANS.

THE uncertainty of weather in England, or the changeable nature of our climate, is probably the greatest drag and hindrance to bee-keeping in this country. What a long series of unfavourable springs we have had during the last ten years! The present one has been the worst for bees and most destructive of their lives we have ever known. It has been remarkable for cold winds, frost, and snow. In the middle of April we have had the hedges and bushes, while green with young leaves, heavily mantled in snow, presenting to view a most novel and beautiful sight. The Plum trees while white with blossom have been twice eclipsed and hidden by heavy falls of snow. Such weather is rather disappointing to the poor bees and their attached admirers and masters.

While moodily pondering the discouragements of bee-keeping arising from the changeable and unfavourable climate of England, a gentleman who is an intense lover of bees called to tell me that he had been to Mr. Yates's shop in Manchester to order hives for this season's swarms, and there saw an accumulation of new empty hives, numbering (he guessed) about 500, all made of straw in large sizes ready for the demand of this season. He was much astonished when told by Mr. Yates that the demand for them is greater than the supply, and that all he saw would be sold before the end of swarming time. "I have evidence enough," he added, "that the spirit of bee-keeping is alive and abroad." This little speech from my visitor rebuked my peevishness, and gave me some encouragement to labour on for the advancement of apian science. A clergyman of great literary attainments called here last week, and in course of conversation said, "We spend the first twenty years of our lives in gaining knowledge, the second twenty in learning and studying how to use and impart it, and the last twenty years are spent in efforts to teach others; and after all the most that the best can do is but little." If I had asked this excellent man what one is to do after he has spent all the three twenties, I dare say he would have said, "Labour on to the end, for a life of occupation and activity even in old age is preferable to one of listless inactivity. Though unable to do much we shall be glad to do a little in helping younger people; and I heartily thank the Editors of the *Journal of Horticulture* for their assistance and their medium of communication. The fact that large hives in hundreds are being sent to all parts of England is both a satisfaction and encouragement to me, for wherever we find large hives in use we find successful bee-keepers."

An American author of a bee book says a perfect hive should contain or possess sixty-one points of distinction or qualities, and that his hive has them all. Throughout the book we find that his hive is the idol of his heart, and his commendation of it blurs almost every chapter. The last accounts of this gentleman that we have had gave us to understand that he had ruined himself in American law courts contending for the patent rights of his hive. We are not inventors, and have no hive peculiarly our own, and never had. We have copied what we have seen, and practised what others have done before us. If hives are built of proper materials and possess two points or qualities—viz., size and simplicity of construction, they will abundantly satisfy all apianists who use them for large harvests of honey. If hives, whether large or small, are not built of proper materials, some process of ventilating them should be adopted. An internal examination of hives at the present time will enable any bee-keeper to ascertain whether his hives need ventilation or not.

If the statements of some American bee-keepers, which "B. & W." quoted in last week's *Journal*, be facts and not fancies, the question of hives is comparatively a very unimportant one. If the statements referred to represent facts, our bees are lazy useless creatures comparatively speaking. In 1863 Mrs. Tapper had two Italian stocks which yielded 200 lbs. of honey,

while fifty-six stocks of common bees did not yield an ounce. At a convention of American bee-keepers in 1866 it was unanimously admitted that Ligurians are superior to common bees. After making these statements "B. & W." favours us with the opinions of the editor of the "American Text-Book of Bees" as to the superiority of Ligurians. They possess greater individual strength, fly with less fatigue, work when other bees are idle, suck honey from flowers which others do not visit, work more steadily during the season, breed earlier in spring and later in autumn, cast off earlier and larger swarms, live longer than common bees, are always so busy that they have no time or inclination for robbing, and they dethrone their queens and prepare successors before old age overtakes them. Hence Italians are seldom queenless. They are more peaceful, graceful, beautiful, attracting many visitors.

Does anybody in England believe this American trumpery? I do not think that it would be possible to find a respectable person in either England or America that would endorse the mischievously extravagant statements of this American editor. Even "B. & W." who has quoted them says that he has overdone it by claiming too many good points, and the wish has been father to the thought. Some ten years ago we had one or two quack dealers in England who said as many extravagant things about Ligurians as this editor. Things have changed a little, and we are not now favoured publicly with a list of their excellences. And even in America in a convention of bee-keepers held some years after 1866, the year referred to by "B. & W.," the question of the superiority of Ligurians was discussed by the most able men of that country; and so far as I could judge, the bulk of disinterested evidence was not in favour of Ligurians, and objections were made by honest men to their bee journals being edited by dealers or interested parties. But I attach no importance to American evidence. Charles Dickens, who went to America to learn the character of the country and its people, wrote it afterwards in these few words:—"I would paint the American eagle as a bat for its blindness, as a bantam for its brag, and as an ostrich from the fact that it sticks its head in the mud and fancies nobody sees it."

Ligurian bees have been in this country about twenty years, why then go to America for evidence of their superiority? Is there nobody can prove their superiority in this country where the weather greatly hinders other bees? Has honey been obtained from them when common bees could not work? I am visited by respectable bee-keepers from all parts of the country, and those who keep Ligurians as well as those who live where they are kept tell me that they are no better than common bees. I am not prejudiced against them in any way, and shall be pleased to see evidence of their superiority from any trustworthy quarter; but nothing but facts are admissible as evidence. When these are produced I will speedily rid my garden of lazy bees, as my object in bee-keeping is profit. We shall be abundantly gratified if satisfactory evidence be presented to the readers of this Journal and the bee-keepers of Great Britain that a superior bee is amongst us. In my search for evidence of the superiority of Ligurian bees I have been unsuccessful for ten years. Perhaps we shall be more fortunate during the present season.

As we do not mean to allude again for some months to the questions of hives and Ligurians, but turn our attention to matters of practical management, we shall be glad to help young bee-keepers over any difficulties they may find in their pathway if they let the Editors know what they are.—A. PATTINGAW.

THE BEE AND THE ROSE.

In your impression of the 20th ult. I notice poetry headed "The Hen and the Honey Bee." In the first verse and third line are the words, "Espied a bee upon a rose." Now, I have been a bee-keeper for some years, and in all my experience never saw a bee upon a rose. Can you tell me whether the composer of the piece was a bee-keeper or was he only a poet?—APIS.

OUR LETTER BOX.

FEATHERS 'ON BRAHMA'S LEGS (Amateur).—Birds have lost more leg-feathering this year than usual on account of the continuance of snow. It is often the case that undue importance is attached to leg-feathering, but it is not the least necessary that where it is a feature of the breed it should be fully developed. Under any circumstances birds that are for hard competition should be in dry pens for some time before they are shown, and in wet weather it is necessary they should be in confinement. In some cases they are kept on straw. It must be recollected the confinement only preserves the feathering; it does not cause additional growth. A scantily feathered bird will not become amply furnished because he is confined.

DEATH OF A BREEDING HEN CANARY (G. C.).—We have made a post-mortem examination of the deceased Canary hen you forwarded, and we give as our verdict that death resulted through inflammation brought about by her being exposed at an open window at the time she was laying her eggs. The ovary gave evidence of considerable inflammation having existed. The dose of castor oil, and the outward application of oil, were the means of temporary relief. When she did not follow up laying after the egg on the Saturday morning, you should have supplied her with sweetened bread and

milk. Castor oil, in addition to a warm bath, is necessary when a hen is egg-bound, but when Nature has freed itself somewhat ease and quietude is essential without the repetition of medicine. The second dose of castor oil did harm by bringing on increased exhaustion. Canary hens breeding in a house should be out of all draught, and if the sun's rays can shine in the room during the day so much the better. Open exposure to the sun does more harm than otherwise, although many who keep Canaries place their birds outside of either door or window when the full power of the sun is on. This should never be done without the roof of the cage being well covered. Birds in their wild free state, whose constitutions can cope with the varied changes of the weather, enjoy life altogether different to those caged up and subject to a partly-artificial temperature, sometimes 30° higher than at others. A part vegetable diet is necessary for breeding Canaries, but just now dandelion is preferable to anything else. As the season advances groundsel will become more seedy and fit for birds. Get another Buff hen, and at once mate with the cock bird, for there is time yet for two or three nests, and if you fix the birds out of the draught you may be more successful.

TURKEY'S EGGS BROTTED (Davis Drake).—It is a very common thing for both Turkeys and Guinea Fowls to lay eggs spotted with white—lime or some such material; it is, however, only for a time, and the eggs hatch well. It is more common in the first eggs than in any other, and arises from temporary derangement of the secretions.

HIVE WITH LAST YEAR'S COMBS (A Young Apician).—Hive a swarm into it without hesitation.

SKATING RINK (R. T.).—We cannot give you any information about the floor. We presume it is asphalted.

METEOROLOGICAL OBSERVATIONS.

CANNON SQUARE, LONDON.

Lat. 51° 23' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.						Rain.
	Barom. at this level.	Hygrom- eter.		Direction of Wind.	Temp of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.				
		Dry.	Wet.			Max.	Min.	In sun.	On grass			
1876. April and May.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.		
We. 24	30.163	53.3	47.0	W.N.W	49.3	48.3	50.4	114.8	94.7	0.010		
Thu. 25	29.994	50.6	47.0	S.	50.3	49.6	48.6	66.6	49.3	0.000		
Fri. 26	29.485	51.3	47.5	S.W.	49.7	48.8	46.7	106.3	47.3	0.000		
Sat. 27	29.543	51.4	48.4	S.	49.3	48.3	46.6	100.8	46.4	—		
Sun. 28	29.695	48.3	48.8	N.	48.4	47.1	48.4	71.9	37.5	0.015		
Mo. 1	29.987	46.3	48.0	N.	47.5	46.9	36.4	108.1	35.4	—		
Tu. 2	30.140	44.5	40.0	N.	46.5	51.0	36.4	107.3	31.5	0.004		
Means	29.947	48.8	45.1		48.7	56.1	41.4	96.6	37.5	0.004		

REMARKS.

26th.—Brilliant morning; very fine all day; but rather heavy and close in the evening.

27th.—Rather dull all day, and early dark; rain between 9 and 10 P.M., but fair before midnight.

28th.—Bright sunny morning; thunder soon after noon, hail at 1 P.M., and lightning at 1.15, wind S.W.; storm over before 2 P.M.; more rain in the afternoon.

29th.—Slight shower in morning, fine at noon and the remainder of the day.

30th.—Slight rain between 10 and 11 A.M., and at times all day; in fact, a wet disagreeable day.

May 1st.—Fine morning; slight shower about 11 A.M., two or three showers during the day, otherwise fine but cold.

2nd.—Another cold day; showers all day, but drying up quickly between the showers.

About 4° lower temperature than the preceding week, and frequently raining; the last day between 8° and 9° colder than the first. Some snow and hail on the 1st and 2nd of May. On the 2nd the temperature fell below the freezing point.—G. J. SYMONS.

COVENT GARDEN MARKET.—MAY 3.

We have no alteration to report.

		FRUIT.					
		s. d.	s. d.			s. d.	s. d.
Apples.....	dozen	0	6	0	0	0	0
Apricots.....	dozen	0	0	0	0	0	0
Cherries.....	lb.	0	0	0	0	0	0
Chestnuts.....	bushel	0	0	0	0	0	0
Cucumbers.....	do.	0	0	0	0	0	0
Black.....	do.	0	0	0	0	0	0
Figs.....	dozen	0	0	0	0	0	0
Filberts.....	lb.	0	0	0	0	0	0
Gobs.....	lb.	0	0	0	0	0	0
Gooseberries.....	quart	0	0	0	0	0	0
Grapes, hothouse.....	lb.	0	0	0	0	0	0
Lemons.....	dozen	0	0	0	0	0	0
Melons.....	each	0	0	0	0	0	0
Mulberries.....	lb.	0	0	0	0	0	0
Neectarines.....	dozen	0	0	0	0	0	0
Oranges.....	dozen	0	0	0	0	0	0
Peaches.....	dozen	0	0	0	0	0	0
Pears, kitchen.....	dozen	0	0	0	0	0	0
Pears, dessert.....	dozen	0	0	0	0	0	0
Pine Apples.....	lb.	0	0	0	0	0	0
Plums.....	dozen	0	0	0	0	0	0
Quinces.....	bushel	0	0	0	0	0	0
Raspberries.....	lb.	0	0	0	0	0	0
Strawberries.....	dozen	0	0	0	0	0	0
Walnuts.....	bushel	0	0	0	0	0	0
.....	dozen	0	0	0	0	0	0

VEGETABLES.

		s. d.					
		s. d.	s. d.			s. d.	s. d.
Artichokes.....	dozen	0	0	0	0	0	0
Asparagus.....	dozen	0	0	0	0	0	0
French.....	dozen	0	0	0	0	0	0
Beans, Kidney.....	dozen	0	0	0	0	0	0
Beet, Red.....	dozen	0	0	0	0	0	0
Broccoli.....	dozen	0	0	0	0	0	0
Brussels Sprouts.....	dozen	0	0	0	0	0	0
Cabbage.....	dozen	0	0	0	0	0	0
Carrots.....	dozen	0	0	0	0	0	0
Cauliflower.....	dozen	0	0	0	0	0	0
Celery.....	dozen	0	0	0	0	0	0
Coleworts.....	dozen	0	0	0	0	0	0
Courgettes.....	dozen	0	0	0	0	0	0
Endive.....	dozen	0	0	0	0	0	0
Fennel.....	dozen	0	0	0	0	0	0
Garlic.....	dozen	0	0	0	0	0	0
Herbs.....	dozen	0	0	0	0	0	0
Horseradish.....	dozen	0	0	0	0	0	0
Lettuce.....	dozen	0	0	0	0	0	0
French Cabbage.....	dozen	0	0	0	0	0	0
Leeks.....	dozen	0	0	0	0	0	0
Mushrooms.....	dozen	0	0	0	0	0	0
Mustard & Cress.....	dozen	0	0	0	0	0	0
Onions.....	dozen	0	0	0	0	0	0
Parsley.....	dozen	0	0	0	0	0	0
Parsnips.....	dozen	0	0	0	0	0	0
Pea.....	dozen	0	0	0	0	0	0
Potatoes.....	dozen	0	0	0	0	0	0
Kidney.....	dozen	0	0	0	0	0	0
New.....	dozen	0	0	0	0	0	0
Radishes.....	dozen	0	0	0	0	0	0
Rhubarb.....	dozen	0	0	0	0	0	0
Salsify.....	dozen	0	0	0	0	0	0
Scorzonera.....	dozen	0	0	0	0	0	0
Shallots.....	dozen	0	0	0	0	0	0
Spinach.....	dozen	0	0	0	0	0	0
Tomatoes.....	dozen	0	0	0	0	0	0
Turnips.....	dozen	0	0	0	0	0	0
Vegetable Marrows.....	dozen	0	0	0	0	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MAY 11—17, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.			
11	Th	Oxford First Summer Show.	68.5	43.2	54.9	4	15	7	57	11	42	5	18	Days.	m.	s.
12	F	Royal Institution at 8.30 P.M.	67.0	42.7	54.9	4	14	7	57	11	42	5	18	6	8	182
13	S	Royal Botanic at 8.45.	68.9	43.4	55.3	4	14	7	58	11	42	5	18	7	8	183
14	SUN	4 SUNDAY AFTER EASTER.	68.2	42.8	55.7	4	11	7	40	0	35	7	6	8	8	184
15	M		64.8	40.7	52.7	4	9	7	41	0	55	8	17	9	8	185
16	Tu	Zoological Society at 8.30 P.M.	66.0	43.8	54.1	4	8	7	43	1	18	9	51	10	8	186
17	W	Royal Horticultural Society—Fruit and Floral Committee at 11 A.M.	65.7	41.0	53.4	4	6	7	44	1	35	10	47	11	8	187
														12	8	188

From observations taken near London during forty-three years, the average day temperature of the week is 65.7°; and its night temperature 47.6°.

CULTURE OF CYCLAMEN PERSICUM.



CYCLAMEN PERSICUM is gayest of the gay among all the plants which brighten the dull winter months with their flowers, yielding a profusion of blossom from November till May, thus having a duration of about five months in fullest beauty. Some sorts have deep pink flowers, others are of a lighter hue, and so they range upwards to purest white, including many charming blotched and mottled kinds, embracing a pleasing variety of colour, to which is added in many of them the rare and precious intrinsic merit of a refined and delicate perfume. This property is not common to all, nor is it of equal power in any two kinds; occasionally it is so powerfully developed that a single plant will send its subtle essence into every part of a large room, but even then its richness rarely cloy the most sensitive or delicate palate. To these merits we must not omit to add the important one of free flowering; seedlings of eight or nine months bearing a couple of dozen flowers, the number annually increasing, till in about three seasons we have huge corms laden with upwards of a hundred expanded flowers, to the effect of which the elegant foliage, with its curious and interesting marbled markings, contributes very materially.

My object in this sketch is to convey some idea of this useful class of plants to the uninitiated, and I think it will become more clear if I now proceed once again to describe a simple and efficient mode of culture. *Cyclamens* are easily managed, never failing to reward good culture by an abundant display of flowers. So invariably is this the case that I am quite unable to understand the statement that they have not been good this season. Certainly the plants under my care have been most satisfactory—perfectly robust in health and vigour, and with flowers, if anything, rather better than usual, both as regards quality and quantity. Now, I do not pretend to infer that I have never had failures—that would be incorrect, but I am free to own that the cause of every such failure was clearly traceable to neglect or mismanagement. Thus much for my own experience. If A, B, C, and others who have not been very successful with this plant will follow me a little farther they will, I hope, by comparing their efforts with my statement, be enabled to discover what has been wrong in their practice; for be it remembered we have here a plant of such a robust nature as to enjoy complete immunity from blight or disease of any kind.

At this season of the year as the flowers fade the plants are removed to an unheated frame or pit till all danger of frost is past; they are then turned out of the pots into a bed of light, rich, gritty soil, fully exposed to the sun, and far enough apart to admit of a vigorous root-action. Abundant and frequent waterings in dry weather and an occasional weeding is then all that is necessary till the end of September or early in October, when the plants are lifted with just a modicum of soil upon the roots, and

potted firmly in rich, light, and very gritty soil in pots of a size proportionate to that of the plants; they are then placed in a close frame for a week or two, and are thoroughly watered once during that time; afterwards they are taken into a vinery or plant house, wherever space can be had, and then the flower buds which cluster so thickly at the base of the leaves soon spring upward into beauty, a little liquid manure then being given occasionally to assist them.

There are two or three points worthy of especial attention here. The plants are not lifted in August, as is so often advised, but in October; they are at no time subjected to a drying process or period of rest. In potting, care is taken to keep the crown of the corm rather high in the centre of the pots, and to let the soil slope downwards to the sides in order to prevent any water accumulating upon the crown; care also being taken to apply the water close to the sides of the pots: a very little moisture upon the crown in winter soon spoiling the plant, both leaf and flower stalks rotting with surprising rapidity, the mischief being almost invisible to the casual observer till it is irremediable, the leathery foliage clustering so thickly as entirely to conceal the corm.

Experience proves that with due attention to these few simple matters the culture of this plant is not at all difficult, and I must repeat that I am at a loss to understand the meaning of the expression, "*Cyclamens* have not done well this season." The assertion is so vague and so calculated to mislead that I should much like to know if a reason is forthcoming to support it.—EDWARD LUCKHURST.

FRUIT-TREE COPINGS.—No. 8.

THERE is a village a few miles out of Oxford where there is scarcely a cottage wall that is not covered with Apricots. The cottages are mostly thatched, with a good deal of overhanging roof. Some of the garden walls are coped with thatch overhanging about a foot. The general impression there is that the projection is a protection to the bloom from frost. Certainly the trees are specially prolific; and it is quite the staple fruit of the place. I am not aware (I never observed it) that the trees are unhealthy from any cause, except that the Moor Park exhibits the same tendency to die off in sections as elsewhere.

I have here (Cheshire, S.) the south wall of a long range of outbuilding covered with Apricot trees. The wall is about 16 feet high, and there is a projection of roof (slate) of about a foot. My trees generally bear well, and are quite healthy, except the Moor Park, which has its constitutional infirmity. Since my acquaintance with the Oxfordshire village I have considered the fruitfulness of my trees influenced by the projection of roof.

I have no experience of glass coping, but can quite believe what Mr. Taylor says of the effect of permanent glass upon the foliage within its direct influence, and the worse than uselessness of retaining it all the year round. I do not, however, understand how such coping on a wall high enough for fruit trees "must extract moisture both

from the foliage (except as above) and of course from the soil." Rain, so often falls at an inclination that it must, even with such a coping, supply a considerable amount of moisture to the foliage and also to the ground at the foot of the wall. In order "to provide against driving rains, wind, and frost," does Mr. Taylor intend that the screen of tiffany is to be additional to the glass coping? If so, would not an entire glass covering be the best and most economical in the end? Either one or the other, I imagine, would only be available to professionals or wealthy proprietors.

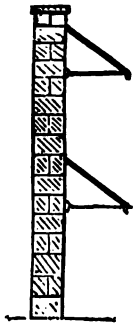


Fig. 101.

It is observable that water does not freeze so soon under trees though leafless as when more exposed. Might not, therefore, net on frames—say 24 inches and any suitable length, fixed like louver boards, be both efficacious and inexpensive? They might be attached and held in position by hooks, and when the fruit was out of danger be taken down and used to protect new-set Peas, or a row of Strawberries, placed like Δ inverted.

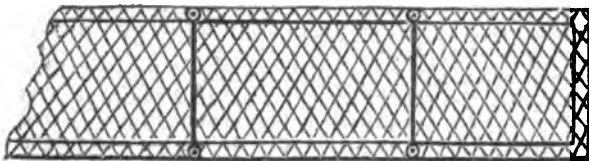


Fig. 102.

The frame should be strengthened by light iron stretches across.—V.

AURICULAS AND AURICULA GROWERS.

Among Mr. Turner's three new varieties at the Royal Botanic Show, April 26th, is noted a green edge, *Star of Bethlehem*. If this is George Lightbody's green edge of that name it should not be called new; and if it is new it should not be called *Star of Bethlehem*, since that name has already been publicly appropriated. Also, the raiser of *Topsy* is Kay, not Keynes, and General Niell is Trail's, not Hill's. The *Auricula* has been kept more free from aliases than most flowers, and with a few such exceptions as that Lancashire's Lancashire Hero called Cheetham's, and Redmayne's Metropolitan Hay's Apollo, the raisers' names have been kept to their flowers with a care that is but fair.

As the sight of offsets is always welcome round plants of our best *Auriculas*, so the National *Auricula* Society itself should be plant-like in this—That about the staid old growers younger hands should be found clustering, both to enlarge the competition and thus add a value to prizes which mere money cannot give, and also fill those gaps that death will make. The chances by which new florists arise seem very various, precarious, and remote. Some few are sons that tread in their fathers' paths, others catch their fancy from a friend, or are smitten suddenly with love while perfect strangers to that fair flower, to which a show affords an embarrassing introduction. It is a good sign that in our northern *Auricula* show the presence of beginners is felt. Perhaps some of them (for one told me so), feel confused and lost as to what constitutes excellence, and even difference in the flower. One bemoaned the blindness through which he could see no distinction worth mentioning between a white and a grey edge. Well, there is more hope of him than of one fair visitor that day, who remarked that these *Auriculas* might be rare but they were not pretty! I do not know that these her words are worth embalming in the *Journal*, but it is well that tastes so charmingly differ. The sublimity of the *Sunflower*, the beauty of the broad *Pæony*, the brave spectacle of heavy masses of bloom are the delight of many eyes; but without even affecting to despise these greater things, a florist with his flowers has that subtle enjoyment of his eyesight which delicate and curious flowers so well afford. May I, then, say to younger growers of *Auriculas* than myself. Do not be discouraged by present confusion and lack of discernment. You will feel and see your way as you go on. With an accustomed eye you will grow to detect a difference where now you see none. The differences that are so delicate grow to be quite plain. And this is one

pleasure with *Auriculas*, that where the outside world that coldly wonders and passing on sees small variety, the eye of the florist finds many enjoyable and delicate degrees of beauty.

I am sorry the *Auricula* is left languishing in metropolitan favour. One would have thought its bare claim as a spring flower would be enough to make it a great favourite everywhere. But *Auriculas* appear to be northern lights that flicker but feebly in the sunnier south.—F. D. HORNER, *Kirkby Malzeard, Ripon*.

EARLY STRAWBERRIES.

MUCH time and labour has to be expended on the preparing of Strawberry plants which have to be forced early and successfully. It sometimes happens that after all the trouble of layering the first runners in small pots, and after they are rooted potting them in the pots in which they are to be forced, placing them in an open situation where they can have the full benefit of the sun, and attending to watering them once or twice a-day as they may require it, storing them where they can be protected from frost until they are required to be introduced for forcing, then watching those large crowns and expecting them to throw up fine bold flower trusses, but which, to our great disappointment, occasionally throw up only a large number of luxuriant leaves, and all we have for our labour with those barren plants is only a little addition to the compost heap. This on some soils is often the case with Keens' Seedling. Black Prince is also very subject to the attacks of mildew, which destroys the functions of the plants to such a degree that they are unable to swell off their fruit to perfection.

Now I wish to give my experience of two Strawberries for the benefit of any of your readers who may think proper to try them. The first is *Early Prolific*, sent out some years ago by Dr. Roden, and I have no doubt but it is in the hands of many by this time who may be able to state their experience of it. With me it succeeds remarkably well both indoors and out. I have forced it now for six years, and my opinion is still the same as I have stated before—that it is a first-class early Strawberry, and only a few days later than *Black Prince*, but I consider it is worth waiting for.

The second is *Amy Robsart*, likewise Dr. Roden's. I believe it is not yet sent out. I had thirty pots of it this season for trial, and watched them very particularly. I thinned the fruit to twelve in each pot, a number which the plants finished off to perfection. One gathering I weighed, which was 8½ lbs. *Amy Robsart* is first-class in flavour, and ripens about a week earlier than *Early Prolific*. It is, I believe, a seedling from *Marguerite*, but perhaps Dr. Roden will favour us with particulars respecting its pedigree, &c. The above two Strawberries have both good constitutions, and on suitable soils will always prove fruitful. I may state that our soil here is light on a sandy subsoil. Of course this is with reference to outdoor fruit.

The above are succeeded by *Duke of Edinburgh*, President, and Dr. Hogg, all of which succeed well on our soil, with the exception of Dr. Hogg, which is a shy bearer out of doors but produces fine crops under glass.

I start my first batches on a bed of leaves, which I consider a great point for success, as it sets all the roots at work and induces the plants to throw their flower trusses well up above the foliage, and then with a gentle circulation of air going on you may be sure of nearly every blossom setting. As soon as they are set I feed every time I water them with just a pinch of guano in the water, which I consider the cleanest and best stimulant that can be applied to plants in pots.—J. ANDERSON, *Hill Grove*.

TWO-DAY ROSE SHOWS.

I ENDORSE the words of wisdom in the letter signed "T. H. G.," and express a hope that there may be an unanimous feeling amongst exhibitors of Roses to do their utmost to stop the increasing prevalence of two-day Rose shows instead of one. We who live at a distance from London and the other principal shows have to cut our Roses at least thirty hours before they are judged, and carry them in a stifling atmosphere for five or six hours, by rail into the bargain. It is during the heat of the first week in July frequently impossible to keep Roses in their proper form until eleven o'clock, when the judges come round; and how often, alas! when we open our boxes after a hot journey, do we find many of the blooms worthless. Think, then, of the public walking round a Rose show to admire blooms that have been cut fifty-eight hours—that is to say, at two o'clock on the second

day of the show! What, then, shall we say of a three-day Rose show? Witness York, 14th, 15th, and 16th of June. I do trust that exhibitors will, as "T. H. G." writes, take this matter into their serious consideration, and unite in endeavouring to put a stop to these two-day shows.—THOMAS JOWITT.

PLANTS FOR FLOWERING IN WINTER.

In the pressure of duties at this busy season there is a danger of something being neglected. It is impossible to do everything as we would wish it to be done, and difficult to do it at all by working in the ordinary way. The only chance to keep up with the requirements is to do three days' work in one. Happily this is not so difficult now as when the weather is hotter, and by making an extra effort at the present time with head and hands we may fairly hope to be able to get on a little easier by-and-by. I see people continue to advertise for "working" gardeners. If there is such a being as a gardener who does not work I should like to see him and have him exhibited. Gardeners worthy of the name, whether they get their living from the profession or merely follow it for healthful excitement and recreation, cannot help working any more than a hen can help laying eggs.

Amongst the things which must be done now because everybody, whether gardeners or not, can see they want doing, are Grape-thinning, attending to bedding plants and fruit trees, and killing the weeds. But there are other things not quite so plain to the ordinary eye which require attention equally as much, and one of the principal in all large establishments is preparing plants for winter decoration, the taste for which is increasing so rapidly that it is scarcely possible to provide too much to meet it. There are many plants of easy growth which, if time can anyhow be spared to give them a little attention now and afford them a start, will almost take care of themselves and flower naturally in the winter months, thereby saving fuel and a great amount of labour. Amongst the easiest to grow and the most useful is

Richardia ethiopica.—Side shoots now taken off and planted in good rich soil outside and well supplied with water, will make good flowering plants by autumn, when they may be potted and made to flower any time at three weeks' notice. If large plants are required several shoots may be planted together, or the old plants may be turned out just as they are. For my purpose I find plants in 6 and 7-inch pots the most useful, and I grow them by the hundred. The above method is the least trouble; I, however, keep plants in small pots all the summer, as I do not think 6-inch pots large enough for the plants when lifted from the open ground, the roots having spread much further than they would do in pots. A large vase filled with such plants and two or three *Amaryllises* has a very good effect.

Amaryllises, too, are much easier to grow than many people imagine. The fatal mistake is drying them off. They should be ripened by exposure to the sun, but never be dried. Mine are grown nearly in the same way as *Cyclamens*; rich soil with heat and moisture while growing, and full exposure to the sun and air afterwards. They are placed outside on a walk or bed of ashes in June and kept well watered. Most of them lose their leaves by autumn, but they are still kept moist at the roots. They are taken into a cool house before much frost comes and introduced to heat in succession as required. With this treatment they always form leaves at the same time as they send up their first flower stem. Most of them which flower from December to February flower a second time a month or two later. A correspondent lately said that 6-inch pots were quite large enough for *Amaryllises*. I certainly should not consider them large enough for my 7-inch bulbs. Many of these are in 10-inch pots and have flower stems 2½ or 3 feet high.

Chrysanthemums for house decoration are quite forward enough if they are now small healthy plants in 4-inch pots and are not allowed to be stunted. If time and material cannot be found for potting at once, turn them out of their small pots and plant rather closely together in light soil till time and material are forthcoming.

Winter *Carnations* are the best of all winter flowers. I have between two and three hundred in 4-inch pots, which will be potted into 8, 10, and 12-inch pots, according to the vigour of the several varieties, as soon as possible.

Deutzia gracilis and *Prunus persica* fl.-pl. have finished their growth in a vinery and will soon be turned outside. The last-named is the best for house decoration when well managed;

but the half-opened sprays of *Deutzia* are very useful for bouquets, wreaths, &c.

Geranias are very useful, and may be had in flower all winter. They require a shaded stove or pit. Some are just commencing growing, others are not yet potted. *G. zebrina splendens*, *refulgens*, and *cinnabarina* flower in the order named. Light soil suits them best.—WM. TAYLOR.

THE NATIONAL AURICULA SHOW.

THERE are a few matters connected with this Show which have occurred to me, and which I had not time to note when I sent off my account of the Show.

In the first place I must quarrel a little with the arrangements. The Auriculas were all placed together on a large table. The Judges selected those which they considered the most meritorious; these were placed in regular order, but the remainder were left in a state of most admired confusion, and, as it often happens, amongst those plants which did not receive any prize were many that were well worth looking at. It is a great pity that more room could not be given so that the plants might all be regularly arranged. Then, as the plants are sent with small balls of earth, surely it would be better that they should be placed in smaller pots. The whole plan grates upon one as untidy. But I can easily see how convenient it is, and I know from bitter experience the trouble and expense that it is to get plants in pots to an exhibition; but still I think that, if the plan must be adhered to, they would look much better if placed in pots more corresponding to the size of the plants. It was like shoving a little boy into his father's top coat. Perhaps the magnificent Town Hall may be open by next year, and the Society may have a larger space allotted to them.

Then, nowhere can one see such a gathering of the genuine old florists as here—men who make sad hashes of names, but who regard their plants as real pets for which they are ready to sacrifice anything; and no one seeing their zeal would question for a moment the truth of the story which tells us of the man taking the blanket off his bed on a cold winter's night to place over his frames. A good notion of their nomenclature was given me by a grower. There has always been a great confusion as to Redmayne's Metropolitan, Hay's Apollo, and Spalding's Metropolitan. I wanted to solve it if I could, but failed. Some growers maintained that they were all the same, others that the two first were identical, others that all three were distinct; but I found that amongst the *rate old* Auricula growers Hay's Apollo was sometimes called Old Poll and *Asia Poll*—a curious corruption of Hay's Apollo.

It is quite clear to me that the bone and sinew of florist-flower culture in the north are these small growers, and that until we can get something corresponding to them in the south we can never hope to see such an interest taken in florists' flowers as we wish. In the eastern parts around Bethnal Green, Leyton, &c., we find that flowers are diligently cultivated in the small gardens one sees in passing along the lines of railway; and if one could see Auriculas, Pinks, Carnations, &c., taking the place of *Asters*, *Marigolds*, &c., then there might be hope for us. It may be said in opposition to this that the main prizes were taken by men of a different stamp, such as my most enthusiastic friend the Rev. F. D. Horner, Mr. Wilson of Halifax, Mr. Gorton of Eccles, &c. True, but withal that these rank and file seem to me as necessary to form the florist army as do the officers I have named; and I doubt very much if the fancy would have maintained the hold it has done had it not been for the Lancashire Simonites, Cheethams, and men of that stamp.

And now farewell to Manchester, for the present at least. It has left pleasant memories, and I shall think with pleasure of the opportunity I had of seeing personally men whom I had known by repute so long, and who had ministered unwittingly to my pleasure through many a long year.—D., Deal.

OLEBODENDRON BALFOURI.

THOSE who have a stove should find a place for this plant. It is equally eligible for pot culture for training to a balloon or other trellis as for extensive roof-covering, where it appears to great advantage at this time (end of April and early May). Its large dichotomous cymes of flowers—white calyx, from which peeps the bright crimson corolla, like a ruby in a pearl setting—have a particularly fine effect, especially when viewed by artificial light. It is a decided improvement on *C. Thompsonii*.

soni, and of the easiest culture. Planted out in a border of two parts turfy loam and one part each leaf soil and sandy peat it speedily covers a large extent of roof. The plant should be freely watered during growth, and after the leaves fall, as they will in autumn, be kept dry, but not causing the wood to shrivel. Nothing need be taken off the long shoots but their unripe ends, and every eye will put out a large cyme of flowers. I cut off all the flowers, leaving three or four joints of the wood next the shoot, and any young shoots wanted are trained-in their full length; and in February cut all side shoots in to within two joints of the stems, and cut out any bare shoots to make way for new growths. If cultivated in pots the plants are potted about a fortnight after being cut-in, and with moisture (moderate at first until growth is fairly on the way) they soon become balls of white dotted with scarlet; and after the main early-summer-flowering keep on ever and anon until autumn. In fact, by drying-off in summer—say August and September, so as to give rest, adding after the leaves are shed coolness for a few weeks, and then pruning and introducing to a brisk moist heat, the plant may be had in flower at Christmas or earlier, six to eight weeks being required to have it in bloom. It does well in a cool stove, and is one of the freest and best for general cultivation.—G. A.

CROTONS FOR TABLE DECORATION.

Crotons are amongst the very best of stove plants for dinner-table decoration. They are effective at all times. Many of them have a peculiarly graceful and pleasing habit, and when well grown their markings are very striking. According to some writers Crotons are notoriously difficult to grow well, nothing short of a house and constant special treatment being required for them; but such is not the case. Their colours do become a little more definite by being fully exposed to the sun; but at the same time, plants of the finest and most useful decorative description may be grown in miscellaneous plant stoves. Proof positive of this may be found in hundreds of stoves throughout the country. In many instances they even attain a wonderful degree of colour under glass shaded throughout the summer as for the preservation of Ferns.

Crotons are propagated by cuttings, which should be taken from the youngest points of the shoots in spring. They root in a mixture of sand and peat under a bell-glass or propagating frame, with a bottom heat of 75°. A number of cuttings may be put into a 6-inch pot, or each may be potted singly in a 2-inch pot. In either case they should not be allowed to remain in the propagating quarters long after the roots are formed, particularly when a number of them are rooted in one pot, as the roots become entwined when a few inches long, and they are liable to be destroyed when separated. Each plant should be placed in a 3-inch pot when it is shifted from the cutting pot. Perfect drainage, even at this early period of their growth, is of the very first importance. They will grow in loam and sand alone. Some good plants are grown in nothing else, and peat and sand is sometimes used exclusively; but a compound of the three is the most suitable. They are gross rooters when once set a-going, and the loam should be the best procurable. After being potted they should be placed in a stove temperature, and they need not have farther shading than is necessary to prevent the leaves from drooping at first. Handsome little plants may be grown in 3-inch pots, but it is when they are placed in 5-inch pots that they become most useful. This size of pot is very convenient for small vases, such as are generally placed in the centre of small tables. In larger pots, both pot and plant often become too big for many purposes. In repotting into the 5-inch pot the same care is necessary in providing efficient drainage. The same kind of mixture as that previously employed should be adhered to. The roots must not be disturbed further than removing the old drainage from the bottom of the ball. The soil should be made very firm in potting, as with attention to this and other particulars they will remain for a number of years in the same pot.

Their general requirements after this time are liberal waterings at the root, frequent syringings and spongings with soft soap and water, and full exposure to light and heat when it can be given them. The hardier they are grown the less they suffer through standing in rooms for days or weeks together, and they do this better than most stove plants.

The sizes most suitable for table decoration are between 10 inches and 20 inches. Some varieties are most effective about the first size, and others when of the latter. The old *C. varie-*

gatum has a rather too stiff and erect habit to look graceful on a table, and is consequently inferior to some other varieties. *C. Johannis* is a favourite variety for the table; its leaves are from 1 to 2 feet long, from 1 to 2 inches broad, and they arch from the stem and droop down in a semi-perpendicular style. Their colour is a deep green, mottled with golden yellow. It does well in a small pot, and should be grown in quantity. *C. angustifolium* has a somewhat similar habit, and is a beautiful plant on the table when well grown. *C. majesticum* is another grand decorative variety in a small state; the leaves are from a foot to 18 inches long, with an elegant drooping habit, and richly marked with green, yellow, and crimson. *C. Weismannii* may also be included amongst the best; its leaves are from 10 inches to 15 inches in length, and from 1 inch to 2 inches in breadth, tapering to a sharp point, and beautifully blotched with green and yellow. Amongst the shorter-leaved kinds *C. Veitchii* is the best. *C. spirale* and *C. volutum* are curious-looking; but they are somewhat difficult to grow into good form, and at best they are no better, or not so good, for table decoration, as some of those first mentioned.—J. Muir.

THE WINTER PROPAGATION OF TEA ROSES

IN MR. SMITH'S NURSERY, WORCESTER.

TEA ROSES are a special feature in this establishment, and these are grown to a large extent under glass. They are grown principally on the Manetti stock. As the demand for these Roses increased, their means of propagation has been enlarged and improved. This class of Roses is very successfully propagated here all through the dull months of winter. Commencing, for instance, with the close of November, or a little sooner, to graft these on the Manetti stock, they had by the beginning of March some thousands of the first-grafted Roses big enough for sale—only, as may well be expected, they were not hardened off sufficiently to be placed in cold houses, much less for packing off. By the 1st of May, perhaps, they may have thirty thousand Roses of the past winter and spring's grafting fit for sale. Many of the earliest-grafted Roses of this season have been producing blooms ever since the beginning of March. Of course it cannot be expected of them to yield many blooms. They are generally cut off as soon as seen while so young; but even two or three blooms from a plant propagated and grown in four or five months' time, and this done in the coldest and dullest season of the year, is worthy of notice, and especially so when this is done here, not by a few dozens, but during winter to the extent of many thousands of plants. In the growing of these a good deal of careful attention is required. Every gardener knows how very liable are young and tender plants to damp off while in confined air even in summer, much more so while in strong heat and confined air in the cold, cloudy, and sunless days of winter. It is quite a sight to see, as here, houses about 70 yards long by 24 feet wide, cram full of these highly fragrant and delicious Roses, and few of them perhaps more than half a year old. This collection is no less varied and choice than it is extensive.—G. DAWSON (in *The Gardener*).

SUBTROPICAL BEDDING.—No. 8.

BED No. 8.

1. *CALADIUM ESCULENTUM*.—This is without doubt one of the most striking subtropical plants in cultivation, and but few can be found to equal it. When planted in a damp situation or where it can receive an abundance of moisture, which is essential to its full development, its bold foliage is unique and strikingly effective. It is quite as hardy as the Cannas, and can be preserved in the same way. It being easy of propagation, that a few words will suffice. I increase my stock by cutting the tuber up in small pieces, each piece having an eye; I then insert them in any light soil, such as leaf mould or cocoa-nut fibre, giving them a bottom heat of 75°, and by doing this in the spring I obtain my plants for the summer decoration.

2. *Gymnothrix latifolia*.—This is one of the most ornamental Grasses yet introduced into this country. It rivals the Pampas Grass in gracefulness and in the pleasing light green colour of its foliage. It was introduced by M. Lasseaux from Montevideo, and has proved quite hardy in this country. It produces tufts 4 to 6 feet in height, composed of stout flowering stems, which throws out leaves almost up to the panicles. The foliage droops from these to the ground and forms one of the most

ornamental Grasses in cultivation. It is increased by divisions and seeds. This plant looks well when mixed with the Caladiums. It is now included in the genus Pennisetum.

3. Lantanas.—These plants are worthy of a place in any subtropical arrangement, especially when used as a carpet to any large-foliage plant. They are equally effective if pegged down or left to grow in their natural style. It is a good plan to plant three or four sorts together, so that the flowers will form a splendid mixture. Propagate in spring, giving them the same treatment as Verbenas.

4. Verbena venosa.—This is a very old and much-neglected plant, but one that deserves to be grown more freely than it is at the present time. It has been used with great success in some of the London parks, and I have no doubt will rise rapidly in favour again. It is a stiff hardy perennial, growing from 9 to 18 inches in height, producing from June until late in the autumn a profusion of rich bluish-violet flowers. It is easily propagated by taking up a few of the old plants in the autumn and laying them under any soil until the spring arrives, when they will throw a quantity of cuttings, and by treating

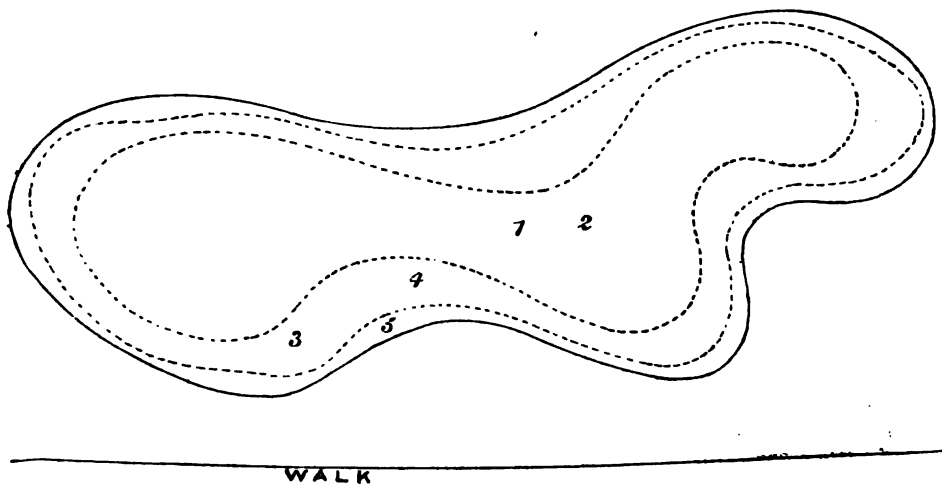


Fig. 103.—Bed No. 5.

them the same as other Verbenas will obtain good plants for the summer bedding. A few of these mixed with the Lantanas have a good effect.

5. Salvia tricolor (Sage).—This is a beautiful dwarf-growing plant with white and scarlet variegation, and is really very striking. It roots freely in a cold frame during the spring and summer months, and is well adapted for an edging.

BED No. 6.

1. Canna Bihorellii.—Dark foliage with orange-scarlet flowers.
2. C. Premise de Nice.—Green foliage, flowers canary colour.
3. C. Prince Imperial.—Green foliage, flowers bright scarlet. Cannas have now become so popular and are so useful and ornamental for summer decorative purposes that they have become indispensable, and as subtropical plants

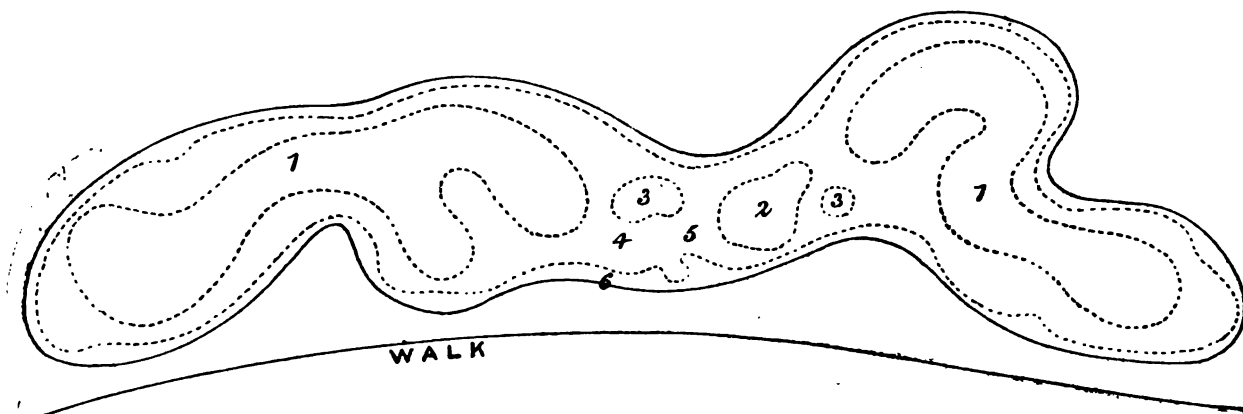


Fig. 104.—Bed No. 6.

none are more effective; for not only are they ornamental in foliage, but they are now invaluable on account of their flowers, which in some of the new varieties nearly approach those of the Gladioli in form of spike and beauty of colour. The plants are easily managed. If you wish to let them remain outdoors all the winter you can do so with safety by covering with coal ashes, cocoa-nut fibre, or any light kind of covering, to protect the tubers from the severe frost, or you can take them up, as they will keep quite as well in any cellar or out-of-the-way place. If you want to increase your stock of plants early in the spring, cut them up in small pieces with an eye to each piece, place them in bottom heat, and as soon as they have started to grow pot them, still keeping them in heat, when they will make fine plants for the season, but when growing give the roots plenty of pot room. In raising Cannas from

seed sow in February or March in light soil, place the pot or pan in a gentle bottom heat, and when the plants have attained their second leaf pot them off singly and grow on in moderate heat until established in 48-pots, which they will be by the end of May or beginning of June. Plant out in rich soil. Arrange the plants according to height of foliage and colour of flower, for they are sure to be a complication of sorts, as Cannas never come true to name. Most of them will bloom before the frost nips them, and perhaps some of them will be worth naming either from beauty of foliage or flower. So it will be a useful as well as an interesting bed of Cannas, and it will repay you for all the trouble you may have taken. But there is one important point which I have left out—that is, in preparing the seeds before sowing. Some recommend you to soak them to soften their hard shells; but you may adopt this

plan without success, for they will be as hard as ever; but if you cut or file the seed on one side right through to the embryo you will meet with good results. They will soon burst forth and be up in five or six days, otherwise they may remain in the pots or pans for months, and then be thrown away as bad seed.

4. *Abutilon Thompsonii*.—This is a distinct and pretty variegated shrub of a neat and erect habit, with small Vine-like or Maple-like leaves richly mottled or marbled with yellow. A useful and effective plant for outdoor decoration. Propagate by cuttings in spring.

5. *Plumbago capensis*.—This is one of the best plants for a carpet under any tall-growing plant. Look around your stock of plants in February or March; pick out the best-shaped plants, grow them on, taking care to stop them when about 9 inches high, afterwards place them in a cool frame or house, and by turning-out time they will be full of flower spikes, presenting a mass of peculiar-coloured flowers until the chilly month of October. If this plant is mixed with the *Abutilon* it has a good effect.

6. *Tradescantia zebrina*.—This is an old and neglected plant, but one worthy of cultivation among any class of plants. It being of a trailing habit is useful for any decorative purpose, and is a conspicuous object among a collection of stove plants, especially where there are any hanging baskets, the under surface as well as the upper being of an interesting colour; it is also very useful for bedding purposes for edging of beds, margins, or lines. If propagated in spring and hardened-off by bedding-out time it will stand the summer months well, especially where it is protected from the scorching rays of the sun, or where it can obtain plenty of moisture.—N. COLE.

ALEXANDRA PALACE.

MAY 5TH AND 6TH.

ALTHOUGH announced as the "Great Show," the promise was not fulfilled in the performance, nor, indeed, was it to be expected. The date fixed was earlier than we have been accustomed to, and our principal exhibitors were at Brussels; in fact, the resources of our nurseries would almost seem to be unlimited. When we read of what Mr. B. S. Williams has done at Brussels, and that his son is at Philadelphia with another large consignment, one must express astonishment that he was able to put in such an appearance as he did here. The collections were all arranged in the grand central hall under their usual advantages and disadvantages, and everything was done to secure the comfort and convenience of those who attended.

In class 1, for a group of twenty foliage and flowering plants arranged for effect, the first prize was awarded to Mr. B. S. Williams, Victoria Nurseries, Holloway, for a fine collection. At the back were *Latania borbonica*, *Pandanus utilis*, *Corypha australis*, *Phoenix reclinata*, *Cycas revoluta*, and *Dion edule*; while grouped as effectively as it is possible to do with these large trained plants were *Aphelexis macrantha purpurea*, *Aotus gracillimus* very effective, *Rhynchospermum jasmminoides*, *Asalea concinna*, *Erica Cavendishii*, *Croton pictum*, *Dracophyllum gracile*, *Erica tricolor Wilsonii*, *Anthurium Scherzerianum*, *Croton variegatum*, and an *Eriostemon*.

In class 2, for the same number of plants exhibited by amateurs, the first prize was awarded to H. Wettenthal, Esq., The Poplars, Seven Sisters Road, Holloway (gardener, Mr. G. Toms), for good examples of *Hedera tulipifera*, *Boronia serrulata*, *Gymnogramma chrysophylla*, *Caladium Chantini*, *Epsoris miniata splendens*, *Platyserium grande*, *Asalea Bernard Andreas*, *Erica Victoria*, *Caladium Wightii*, *Hedera Hookerii*, *Eriostemon buxifolium*, *Croton variegatum*, *Phoenix reclinata*, *Croton undulatum*, *Eriostemon nerifolium*, and *Alcassia metallica*. The second prize was awarded to Sir F. H. Goldsmid, Bart. (gardener, Mr. Geo. Wheeler), for the following:—*Dendrobium nobile*, *Erica candidissima*, *Aphelexis purpurea*, *Hedera Hookerii*, *Phoenix sylvestris*, *Medinilla magnifica*, *Dracophyllum gracile*, *Oncidium sphecelatum*, *Franciscoa calycina*, *Adenandra fragrans*, *Dracena Veitchii*, *Rhynchospermum jasmminoides*, *Asalea Model*, *Lomaria gibba*, and *Anthurium Scherzerianum*.

In class 3, for twelve Roses in pots, Mr. Charles Turner of the Royal Nurseries, Slough, was the only exhibitor, with a collection of medium-sized and beautifully flowered plants, consisting of *Le Mont Blanc* (1), white, with creamy yellow centre; *Perfection de Monplaisir* (1), small yellow, weak footstalk; *Paul Verdier*, *Alfred Colomb*, *Souvenir de la Malmaison*, *Paul Neron*, *Marquise de Castellane*, *Edouard Morren*, *Souvenir d'un Ami*, *Madame Victor Verdier*, *Charles Lawson*, and *Madame Therese Levet*. In the same class for amateurs there was also only one exhibitor, but the collection was about one of the best, if not the best, I have seen exhibited. It was by the Misses Christy, Coombe Bank, Kingston-on-Thames (gardener Mr. J. W. Moorman), and comprised *Madame Lacharme* (good), *Marquise de Castellane*, *Anna Alexieff*, *Paul Ferras*, *Paul Verdier*, *Chesbunt*

Hybrid (very good), *Paul Neron* (excellent), *Miss Ingram*, *La France*, *Madame Alice Dureau* (good), and *Victor Verdier*.

In class 5, for eight *Asaleas* (nurserymen), Mr. Charles Turner was first with small but well-bloomed plants of *Madame Verschaffelt*, *Flag of Truce*, *Charmier*, *Marie Vervaeke*, *Duc de Nassau*, *Duchesse Adelaide de Nassau*, crimson with a beautiful purple shade, and two others. Mr. Williams was second, and Mr. James Outbush third. The amateurs' class of *Asaleas* was certainly marked by two of the most indifferent collections I have ever seen put up. The plants were trained umbrella fashion, and looked as if they might have been thirty years old; while the sorts, as may be seen, were such as have long been forgotten—*Gigantifolia*, *Striata formosissima*, *Jenkinsonii*, &c.

In class 7, for twenty Exotic Ferns (open), Mr. B. S. Williams was first with some fine plants of the following:—*Cyathea medullaris*, *Todea africana*, *Adiantum farleyense*, *Dicksonia squarrosa*, *Gleichenia rupestris*, *Lomaria cycadifolia*, *Todea pellucida*, *Cibotium Schroederi*, *Gleichenia flabellata*, *Adiantum gracillimum*, *Gleichenia Mendellii*, *Cyathea Burkei*, *Cibotium regale*, *Cyathea dealbata*, *Dicksonia antarctica*, *Marattia elegans*, and *Cibotium princeps* and an *Alsophila*.

In class 10, for twelve Show Pelargoniums, Mr. Turner exhibited some small but beautifully bloomed plants of the following new and first-rate kinds—*Presbyter*, *Ambassador*, *Brigand*, *Madeline*, *Arohdake*, *Mrs. A. Matthews*, *Mabel*, *Prince Leopold*, *Defiance*, *Forester*, *Diplomatist*. He also exhibited a number of others in the miscellaneous class. Indeed this class comprised some of the best exhibits of the Show, for in it were two fine collections of Roses by Messrs. Lane & Son, and Wm. Paul and Son of Waltham Cross; miscellaneous groups by Mr. B. S. Williams and Messrs. Outbush & Son of Highgate; *Auriculas* by Mr. Turner of Slough; and Fern cases by Messrs. Dick Radclyffe and Co., High Holborn.

Mr. Lane's Roses consisted of beautifully bloomed plants of *Général Jacqueminot*, *Anna Alexieff* (very good), *Duchesse de Caylus*, *John Hopper*, *Duchesse d'Aosta*, *Elie Morel*, *Madame Therese Levet*, *Princess Mary of Cambridge*, *Achille Gouod*, *Victor Verdier*, *Marquise de Castellane*, *Marie Baumann*, *Madame Clemence Joigneux*, *Jules Margottin*, &c. Mr. W. Paul's was a more numerous collection, many of them being standards, and contained *Céline Forestier*, *Souvenir d'un Ami*, *Charles Turner*, *Madame Faloot*, *Julie Touvais*, *Magna Charta* (seedling), *Peach Blossom*, *Gabriel de Peyronay*, *Baronne Adolphe de Rothschild*, *Charles Lawson*, *Victor Verdier*, *Madame Therese Levet*, *Madame Victor Verdier*, *Sénateur Vaisse*, *President*, *Isabella Sprunt*, *Star of Waltham*, *Charles Margottin*, *Salet* (Moss), &c.

Mr. Charles Turner's collection of Alpines contained *Charles Liddard*, *Murillo*, *Mercury*, *Phoenix*, *King of the Belgians*, *William Bragg*, *Nathaniel Norman*, *Acteon*, *Ovid*, *Fairy Queen*, *Lustre*, *Oracle*, *Madalena*, and *Queen Victoria*.

In Mr. Ware's collection of out blooms of Pansies were fancies *Buttercup*, *Curiosity*, *J. B. Downie*, *Colonel Wedderburn*, *David Mitchell*, *James White*, *Thomas Grainger*, &c.; and show varieties *Royal Blue*, *Cloth of Gold*, *John Easton*, *Duke of Perth*, *Mrs. Turner*, *Omurean*, *Cupid*, &c. He had also some bedding *Violas*, and Pansies *Cliveden Purple*, *Blue King*, *Golden Gem*, *White Swan*, *Striata alba*, &c.

Certificates were granted to Mr. Charles Turner for Alpine *Auricula* *William Bragg*, very dark, but inclined rather to be pin-eyed, and *Charles Liddard*; *Asalea Apollo*, a splendid large white; *Pelargonium Gipsy*, very dark; and *Pelargonium Diplomatist*, a beautiful flower, with white centre and narrow wise edge.—D., Deal.

THE BRUSSELS SHOW—ADDENDUM.

In consequence of the earliness of the dispatch of the report transmitted, even before the official circulation of the prize list, a few trifling clerical errors occurred.

It was stated that Messrs. Veitch & Sons were awarded the gold medal offered by the Comtesse de Flandre; it was the gold medal offered by the Comte de Flandre which the Messrs. Veitch won for the splendour of their collections as foreign exhibitors, the medal offered by the Comtesse being awarded to Mr. Louis Van Houtte for the value of his collections as a Belgian exhibitor. The gold medals in these prizes of honour offered by the King and Queen going, as stated, to Mr. B. S. Williams and Mr. Linden respectively.

The name of the remarkable double white *Asalea* purchased by Mr. Turner of Slough was printed *Fimbriata*; it should have been *Imbricata*. It is pure white, and as double as a *Carnation*, or more correctly, its petals being as perfectly imbricated as the petals of a *Camellia*. *Rhododendrons* were described as superior; it should have been "numerous but not excellent." The gold medals for them were won by MM. Vuysteke and Reit. The name of the new plant in flower to which the first prize was awarded is *Pavonia Wioti*; it was considered to be worthy of a first prize, while Mr. Bull's *Croton formosum* (exhibited as a new seedling plant not in flower), a cross between *C. Veitchii* and *C. Weismannii*, was only awarded a second prize. *Crotons*, it would appear, are not favourite plants on the Continent.

The success of the English exhibitors was so remarkable that the honours which they won are recapitulated as follows:—

Messrs. Veitch & Sons, who exhibited splendid groups of mixed plants and of Roses, did not show for competition, but were awarded a large gold medal, and they also received the gold medal offered by the Comte de Flandre for the foreigner who contributed most to the richness and splendour of the Exhibition.

Mr. B. S. Williams, who was the premier English exhibitor, took the first prize "*à l'unanimité*"—the large gold medal offered by the King to the foreigner who contributed most by the richness and merit of his collections to the splendour of the Exhibition; the large silver-gilt medal for three new plants; the gold medal for twelve new plants; the gold medal for twelve plants of recent introduction; the large silver medal for the new Palm, *Kentia Moorei*; the large silver-gilt medal for a new *Cycad*, *Cycas intermedia*; a silver-gilt medal for *Amaryllis*; the large gold medal of 500 francs for twenty miscellaneous plants. The LARGE GOLD MEDAL of 1000 francs for twenty-five Orchids in flower, distinct; the gold medal for six *Odontoglossums*; the gold medal for six herbaceous Ferns; the gold medal for six Filmy Ferns; the large silver-gilt medal for twenty *Cyclamens* distinct.

Mr. William Bull received the large gold medal for the scientific and general merit of his exhibitions; the large gold medal for six new plants; the large gold medal for three new plants; the large silver medal for a new plant not in flower, *Davidsonia pungenis*; the large silver-gilt medal "*par acclamation*" for the new Palm, *Pritchardia grandis*; the large silver-gilt medal for the new *Dracena Goldiana*; the large silver-gilt medal for three new stove plants; the large silver-gilt medal for *Croton formosum*.

Mr. John Wills received the large silver medal for six new plants introduced to Europe since 1873; the gold medal for three *Dracenas*; the large silver medal for *Dracena voluta*; the large gold medal of 500 francs for twenty-five *Dracenas* remarkable for their beauty, their novelty, and their culture; and a silver medal for *Yucca filamentosa* fol. var.

Messrs. W. Paul & Son received the large gold medal for a hundred Hybrid Perpetual Roses; the gold medal for fifty Hybrid Perpetual Roses; the gold medal of 800 francs for twenty pyramid Roses; the gold medal for fifty Tea Roses; and the large silver-gilt medal for twenty-five Tea Roses.

Mr. Charles Turner received the silver-gilt medal for fifteen Auriculas; Mr. Jones of Frogmore the silver medal for a collection of Apples; Lady Dorothy Nevill for articles made from wood of the Oak stained with the mycelium of *Peziza eruginea*; Mr. Terry of Walham Green a silver-gilt medal for fruit of Vanilla.

All honour to British horticulture!

The most extensive and successful of Belgian exhibitors were Mr. Linden, who was awarded fourteen gold and four silver medals, and Mr. Van Houtte, who had eight gold and twenty-four silver medals.

SYRINGING VINES.

Of the beneficial effects of syringing Vines in order to keep down the red spider there cannot be two opinions, and lately a correspondent informed your readers that this might be continued after the Vines had set their fruit without spoiling the bloom, provided the water used had been properly filtered. As the town's water here is tolerably pure and not very hard, I should be glad to know through your columns whether anyone growing Vines at or near Leeds has used the town's water after the fruit has set, and with what result as regards the bloom; also whether it has been tried just as it comes from the pipes, or whether after being boiled or filtered.—J. F. C., Leeds.

ANTHURIUM SCHERZERIANUM.

This is one of the finest, if not the finest, of all dwarf-flowering stove plants, continuing in bloom for a lengthened period, each flower remaining unfaded from two to three months; the flowers, or rather floral spathes, being of the most beautiful brilliant scarlet, alike novel and charming. Abundant in blooming, it is of very easy culture, succeeding admirably in a cool stove, and in a warm one is seldom out of bloom. It usually in a cool stove commences growing and flowering in March, and continues blooming until autumn, appearing all the better of a rest during winter. A position near the glass appears desirable, so that the leaves are about 15 inches from it, and in summer is the better of slight shade from bright sun. Moderate air-giving only is required; but in that respect need not differ from the treatment usually given to stove plants.

Potting may be done at any time; but I prefer to shift in February. In doing so all the old compost that can be removed is taken away, not of course injuring the roots, and

pots about one-half the diameter of the spread of the leaves are used. Drainage is given to about one-third the depth of the pots, and the compost used is a mixture of fibrous brown peat, very fibrous loam, sphagnum, and charcoal in equal proportions and mixed, the roots spread out, and the stuff worked in amongst them and made rather firm, sprinkling with silver sand. I ought to have stated that over the drainage is placed a layer of sphagnum to ensure the efficiency of the drainage, and the plants are kept well raised in the centre of the pots, the roots being just covered with the compost. A good watering is then given, and a neat finish is imparted by surfacing the pots over the compost with green moss—the kind which is of a deep green colour, found on rock in moist shaded situations, which continues to grow, and has a fine effect.

The plants are always kept wet at the roots, though in winter they have a considerably lessened supply than during spring, summer, and autumn. From February to October the plants are sprinkled overhead twice a-day, and three times during the hot summer months, and with the thorough drainage daily watering will not cause any mischief. In winter the moisture from sprinkling the flowers, and that evaporated from the pipe troughs, is ample, keeping just moist at the roots by applications of water as necessity demands.

As the plants increase in size the spathes also considerably increase in size as compared with those of young plants, and under cool treatment I find the leaves are larger with a corresponding increase of substance, also of flower or spathe, though they may not be so speedily produced. With every fresh leaf we have its bloom, so that between warm and cool treatment there is really no difference in abundance of bloom, only they more quickly succeed each other by the warm-treatment mode of culture.—G. A.

ASPIDISTRA LURIDA VARIEGATA.

For decoration in halls or rooms, or other positions where strong light cannot be afforded, this fine old variegated plant is almost unrivalled. Its large leaves have the texture of Palm leaves, and are as large and of the same shape as the leaves of the Eucharis. When the *Aspidistra* is in good health the foliage is of the richest green beautifully striped with wavy white bands. The plant will endure the vicissitudes of varying temperature, dust, drought, or wet better than most plants. It is adapted for pot culture, for planting out in rockeries under glass, or for growing in baskets. It is hardy, at least in the south of England; but to grow it to perfection it must have generous treatment and a shaded place in an intermediate house. I have found it invaluable for the purposes named, and doubtless others have done so who have cultivated it well. It grows freely in turfy loam, lumpy peat, and charcoal.—J. W. B.

MR. WILLIAM CUTBUSH.

MANY will regret sincerely to hear of the death of this well-known horticulturist. He for some years took a very prominent position at our London exhibitions with Heaths, stove and greenhouse plants, &c., and had carried on business at Barnet during nearly thirty-six years. Many horticultural friends, especially in the midland counties, north of England, and Scotland, where he was well known, will sympathise with his family in their sudden bereavement. He died at Brighton on the 4th instant, whither he had gone for the benefit of his health.

NOTES AND GLEANINGS.

INTERNATIONAL HORTICULTURAL EXHIBITIONS are more than ever being regarded as gatherings of the greatest importance; and if timely preparations are made, and an international system of management is adopted both as to fixing of time and place, success cannot fail to ensue, and a great and general impetus be given to the work which the exhibitions are so well calculated to foster and encourage. At Brussels a popular inquiry was, "When are we to have an International in London?" "Next year," replied the enthusiasts. But it was urged that next year would clash with Amsterdam, and 1878 is named as the time of a great gathering in France. It is important that there should be no undue haste, no clashing between country and country, no dividing of national resources. England can afford to wait, and the London gathering will be the greater for the delay, provided—and this is of the greatest importance—that there is no unnecessary delay in fixing the

year in order that preparations can be made by exhibitors, and then a gathering greater than any that has gone before may be regarded as a certainty. What England can do has been foreshadowed by the commemorative gathering at South Kensington last year, and also by the recent successes in Belgium; and when so much can be effected on a short notice, what may we expect when our resources are directed to a fixed date sufficiently distant to afford special preparations being made by exhibitors?

— We understand that the subject for discussion at the fortnightly meeting of the Horticultural Club on Wednesday, the 19th inst., will be—"Is it desirable to hold an International Horticultural Exhibition in London in 1878?" Several of the leading horticulturists, professional and amateur, will take part in the discussion.

— We are informed that in consequence of the extreme coldness of the weather which prevailed during the period of the Great Exhibition at Brussels that injury was done to many plants—Orchids and other tender stove plants—by their ten days' sojourn in the cold wooden structure in which the Exhibition was held. During some of the nights there was frost, and in the daytime there were heavy showers and a cold easterly wind. The temporary building was imperfectly heated, and the extraordinary amount of syringing indulged in by the Belgians created a damp chilly atmosphere prejudicial to tender exotics. The open-air vegetation of London and Brussels is synchronous; the Lilacs and Chestnuts are commencing flowering in the two cities, and other trees are in the same stages of development in Belgium and the south of England.

— HARDY DECIDUOUS MAGNOLIAS are amongst the most effective plants or trees at this period of the year. Occasionally we find a good specimen of *Magnolia conspicua* in England, and never without admiring its bold white flowers. In Belgium these *Magnolias* are cultivated much more freely than in England, large trees of them being seen laden with noble blossoms. One of the finest and most distinct is *M. Lenné*. The flowers are very large—4 to 6 inches in diameter—the petals externally being rosy crimson, and internally pure white. Plants in quite a small state flower profusely and produce a splendid effect. This variety at least in the south of England would be quite hardy, and is eminently worthy of notice and of culture. A principal cause of these plants being injured by frost is the habit of raising them from seeds. They should be increased by layers or grafting, and they will then endure severe winters without receiving serious injury. The flowers of *M. Lenné* had recently been subjected to 10° of frost, and were as bright and fresh as ever. It is a plant which certainly should be tried in English shrubberies, where, if it succeeded—and there is every probability that it would succeed—its gorgeous flowers could not fail to command attention and admiration. They are, in addition to their beauty, also sweetly scented.

— SEVERAL kinds of *IXIA* are now highly ornamental in the Orchid-house porch at Kew. Some of them require considerable attention, especially at certain seasons, to produce good flowering corms. It often happens after long cultivation in pots that many corms are too weak to flower, and the display in consequence is very irregular. The *Irides* do not like confinement as do many of the Liliaceous bulbs, which seem to flower the better the more tightly they are potbound. All the *Irides* appear to like liberal treatment, and the question suggests itself whether it would not be advantageous to procure flowering corms of *Ixias*, *Babianas*, &c., from whence they could be grown out of doors as in some parts of Cornwall. Nothing could be finer than a display of these plants at this season.

— We are informed that the annual exhibition of the NATIONAL TULIP SOCIETY will be held at the Manchester Botanical Gardens on Friday May 26th, and Saturday May 27th, and that the northern growers are hopeful of a successful display?

— *DATURA SANGUINEA* is now flowering profusely in the conservatory at Kew. This specimen is planted in one of the beds, where it makes vigorous growth and produces a corresponding amount of bloom. It is commonly thought that cuttings of this species will not strike, but which, however, is quite a mistake. The first thing requisite is to obtain suitable cuttings, and these are to be found usually as small side growths from the old wood. The succulent quick-growing shoots cannot be expected to strike. The next important

point is to place the cuttings where they will not be excited into an exhaustive attempt to continue growth. They must, therefore, have a cool position for at least some time, and on a shelf near the glass is perhaps the best place. Professional propagators are well aware that it is worse than useless to place the cuttings of some plants in heat, but the fact is not sufficiently appreciated by many amateurs, and perhaps some gardeners. The secret of success in striking the cuttings of many plants rests in their activity being lessened rather than increased, so that there is as little demand as possible for nutrition until the roots have time to form. Examples might easily be given, but one notable case will suffice. A number of cuttings of *Camptopus Mannii* were placed in heat and all failed, while more recently a number were given a cool position and all succeeded. These were inserted at intervals during the entire year in both cases; so that condition of growth made no difference.

— THE second Exhibition of the ROYAL AQUARIUM and Summer and Winter Garden Society, which was announced to be held on the 10th inst., has been postponed to next Tuesday and Wednesday the 16th and 17th, in order to give His Royal Highness the Prince of Wales an opportunity of honouring the Exhibition by his presence. The Roses alone will be worthy of Royal patronage, upwards of £120 being offered in prizes in these classes. Liberal prizes are provided in the other classes, notably £25 for twelve new and rare plants in or out of flower; £19 for six plants never before exhibited in Europe; £39 for *Dracenas*; £32 for variegated *Pelargoniums*, and £20 for *Orchids*. A successful gathering is anticipated.

— We lately noticed in the nursery of Mr. Charles Van Geert at Antwerp an old hardy British plant which is seldom seen, but which is very effective not only by its variegated foliage, but also by its variegated flowers. *EUPHORBIA AMYGDALOIDES VARIEGATA* might be called an evergreen but that its foliage is about half white; it is retained for the most part throughout the winter. The plant is of bushy habit, growing about 4 feet in height, but by pinching may be kept to any height required. The plants flower freely when in quite a small state, some of them in 8-inch pots producing spikes or corymbs of flowers. These are creamy white and green with yellow stamens, and are both singular and attractive. Apart, however, from the flowers, this plant by its agreeable habit and constant variegation could be used with effect as a winter or spring bedding plant in English flower gardens. The leaves are as distinctly variegated and not dissimilar in form to those of the *Arabis*, and the plant is of a free-growing character. It flowers in April, and when bruised the stems exude the milky juice common to the *Euphorbiaceae*.

— THE Centennial Commission of the PHILADELPHIA EXHIBITION are, says the *Prairie Farmer*, erecting a special annex for the exhibition of fruits. The dimensions of the structure, situated on the east of the agricultural building, and connected with it by a covered way, are 180 by 200 feet, affording room for the display of eight thousand dishes of fruit at periods of special display. Although the exhibition of pomological products will extend over the entire term of the Exhibition, affording most marked manifestations of the wide range of soils and climates, still there will be certain periods especially designated for the display of particular fruits which have special seasons, such as Strawberries, June 7th to 15th; Raspberries and Blackberries, July 8th to 8th; Melons, August 22nd to 26th; Peaches, September 4th to 9th; Nuts, October 23rd to November 1st. The pomological annex will also be used for the exhibition of vegetables continuously and at the stated dates of June 20th to 24th for early summer vegetables; September 19th to 23rd for autumn vegetables; and October 2nd to 7th for Potatoes and feeding roots.

THE OLD MARKET GARDENS AND NURSERIES OF LONDON.—No. 9.

I do not think that the London suburb of Hackney (once a pleasant rural village) has so many memories of the past connected with it as have other suburbs better known to fame. It is true some writers would have us believe the tradition that those useful conveyances of the olden time called Hackney coaches took their name from this place, because they were first brought into repute by the residents here, who had to make frequent journeys to the City, and devised a style of coach which was once deemed very convenient. Also, as we are told, Hackney was formerly noted for its boarding schools,

as was Chelsea, and the young fellows who had nothing better to do were wont to stroll off hither in the evening to observe the damsels "taking the air" in prim procession after school duties for the day were over. Within the last few months public attention has been drawn to Hackney owing to the determined opposition made by some of the inhabitants to the attempted enclosure of Hackney Fields, much valued as a recreation ground, and which a person who shall be nameless proposed to deal with in a manner which might be legal but scarcely just to the neighbourhood. With amateur and professional gardeners, however, of the era of Georges III. and IV. Hackney was an interesting spot, chiefly because the nursery of the Messrs. Loddiges was situate there. Even in this good year 1876, Hackney, as compared with other suburbs, cannot be said to be crowded with houses if we survey the whole of the district; and in 1842, as the chronicler of its history tells us, it could boast of about 1500 acres of grass land, while the market gardeners and nurserymen had 140 acres or more. A curious silver token, bearing the name J. Milton, exhibiting on one side a view of Hackney Church and on the other a figure of Time, with a globe and a pile of books on the right, while on his left is a garden plot with plants, and the motto *Memoria in aeterna*, has not its exact history traceable according to this chronicler. But may it not have had to do with some gardener whose history has vanished? Let us take it as an allegorical representation. Time, we know, presides over all the gardener's pursuits; the globe fitly shows that all parts of the world yield treasures which British horticulture successfully cultivates; and the books indicate that study is not to be neglected, though the practical part of the pursuit must be attended to, as suggested by the garden on the left.

Before I speak of Hackney's famous nursery it should be noted that the ancient forest of Middlesex once overspread the district, the lower ground being much of it marshy and consisting of clay and loam, the gravel hills rising above. Mare Street, properly Mere Street, an old street in the hamlet, is a reminiscence of some mere or pond which has long disappeared. Though many citizens of London had country houses here in the seventeenth and eighteenth centuries, the place was not without its noble residents, as witness the names of the Earls of Pembroke and Oxford, and of Lords Hunsdon and Brooke. Lord Zouch, indeed, son of George Lord Zouch, a well-known courtier in the reign of Queen Elizabeth, deserves more than a passing mention as an early experimenter in modes of gardening which very slowly crept into use. This nobleman, friend of Sir Henry Wotton and Ben Johnson, was one of Queen Mary's Judges, and well spoken of in his day, but evidently most at home in his garden. It was on an estate he had at Hackney that he especially devoted himself to horticulture, where he had a nursery, orchards, and a physic garden. We are particularly told that he removed successfully Apple and Pear trees of thirty years old, which seems to have excited much astonishment. This worthy amateur died in 1625, escaping the troublous times that were coming upon the Stuarts; and being buried in an old manor house in Northamptonshire, where there was a private chapel, with a vault close to the wall of the wine cellar, he was the cause of the following epigram:—

"Whenever I die let this be my fate,
To lie by my good Lord Zouch;
That when I am dry to the tap I may lie,
And so back again to my couch."

Through carelessness or ignorance the author of the "History of Hackney" has given us but a confused account of the nursery of the Messrs. Loddiges, and he leaves it doubtful whether it always occupied the same ground. Probably it did, only some enlargement of the premises was made by the increasing demand for space towards the end of last century, when the cultivation of exotics became a marked feature of the establishment. The front of the premises as they were seen by our grandfathers abutted on Mare Street, covering a plot of ground which in the seventeenth century was called by the odd name of Barbour Berns: no one can say why. It was not to be wondered at that the vulgar afterwards designated the mansion built there "Barber's Barn," and which seems to have been erected in 1591. Col. Okey owned it when he was attainted as a regicide and his property was made over to the Duke of York, who in 1668 transferred his interest therein to Okey's widow—hardly out of pure generosity, one would think. After a gap of about a century we find John Busch, a nurseryman from Holland I presume, acquiring the estate, and cultivating the ground in a manner which carried his fame to distant lands. The Empress of Russia known as Catherine II.,

dissatisfied with the people in her employ, having heard of Busch, invited him from England to lay out her garden, and he accepted the offer, giving up his concern at Hackney to the Messrs. Loddiges during 1771. The new owners of the nursery built a number of additional hothouses, steam being the heating agent, and these gentlemen took credit to themselves for having improved upon the apparatus then in use, though I am not aware that they patented these alterations. In 1787 Mr. Conrad Loddiges purchased some additional land, at that time a grassy meadow belonging to St. Thomas's Hospital, and five years later there were other alterations consequent upon the large importations from abroad—at least, what were reputed large in those times. The wars with the French Republic and with Napoleon had a prejudicial influence on horticulture, not only from the check given to free intercourse with continental nations, but from the scarcity of cash occasioned by the enormous national outlay; and Messrs. Loddiges' nursery had its period of stagnation to revive in vigour after Waterloo. As is evident from the account given by one author of this nursery when in its zenith, there must have been a large proportion of the plants under glass. He mentions that the firm enumerated (about thirty years since) two hundred species of Palms and two thousand Orchidaceous plants, while the Heaths were extensively represented in their houses, as also Ferns and Cacti. In Cape plants and those from South America they considered they had few rivals amongst London nurserymen. There was a fine arboretum, but the space occupied by the nursery never exceeded 15 acres, which people thought, as we read, a "considerable extent;" so says the historian in 1842, when Messrs. William and George Loddiges were the proprietors. That the land was devoted to other purposes soon after that date I infer from the fact that Cunningham, in his "London," alludes regretfully to the noble nursery of Hackney in the past tense. He wrote in 1849. Loddiges' Road survives as a memorial, and the clinging of that district of Hackney to rural traditions is manifest to me in sundry names still attached to streets there. Thus we have Forest Grove, Lavender Grove, Shrubland Grove, Ash Grove, Laurel Street, Holly Street, and Myrtle Street. Next in importance to Loddiges' nursery was that belonging to Mr. Browning, which was situate near the turnpike at Kingsland Gate; and a Mr. Smith of Dalston had also laid out a good deal of ground at Hackney.

Quaint old Pepys gives a comical yet not very clear account of a garden he visited at Hackney, which was owned by Sir Thomas Cook. Pepys went there in the absence of the owner (possibly by intention), and owns he was disappointed; there was plenty of space, but few plants. The head gardener gave him some gossip, telling him amongst other things that Sir Thomas meant to lay out £300 on it next year. They had just had an awkward catastrophe, for he writes, "I saw two green-houses, but the greens are not extraordinary, since one of the roofs being made a receptacle for water, overcharged with weight fell down and made a great destruction amongst the trees and pots." No doubt it would, and it must have taught the gardeners that it was not advisable to store-up rain water on a roof. Presumably it was rain water that caused this accident, but it is a proof of the observant habits of this man that he also notes they had a supply of water brought from a distance in pipes, which he saw stored in small ponds. And Pepys mentions slightly gardens at Hackney belonging to a Mr. Drake and a Mr. Burke, and in the latter he first saw Oranges grow.—C.

COLOUR OF HYDRANGEA FLOWERS.

REFERRING to the observations of correspondents on this subject I may state that here (in the Isle of Man) blue is the usual colour and pink the exception to the rule, and this state of things prevails in districts quite unaffected by the action of iron. We find that the blooms come blue in various kinds of soil, but much deeper in colour and with greater certainty in turfy soil. The plants grow in many places in this island in wild luxuriance, growing in bushes 8 or 10 feet high and as much in diameter, and covered with a perfect sheet of blue flowers, without anything whatever being done to protect or assist them.—A. D., *I. of Man.*

LIVING in a neighbourhood where Hydrangeas abound and flourish, and having carefully observed them both here and in the south of Ireland for some years past, I have come to the conclusion that the colour depends more on the action of light than on the composition of the soil. The plants growing under

trees or shaded by banks or walls are red or blue in direct proportion to the amount of exposure to the sun's rays.

Two years ago I cut down an old plant which was surrounded with Beech saplings, at the same time grubbing them so as to give the plant a fresh start. It is now 6 feet in diameter and 5 in height, and last August was covered with red flowers. Previously to the saplings being cut down the Hydrangea flowers were blue. Other blue plants growing within 20 yards of the same place, but shaded by trees, were still blue last autumn. The cut-down plant is in boggy ground by the margin of a small stream, and the soil is full of decayed vegetable matter, but free from any trace of iron.—A. R., Stoke Fleming, S. Devon.

THE MORIL.

THIS, or as it is oftener spelt, Morel, is so named from the French for it, *Murille*, which is derived from *Mure*, the Mulberry, the cap of this Fungus somewhat resembling that fruit. The specimens sent to us were from North Lancashire; but we have been requested not to specify the locality because, as our correspondent says, "we have little left after the forays of collectors."

The Moril is the rarest of our wholesome fungi, and it is so little known that we have had the specimens engraved—the figures being half the size of the examples sent to us—and extract the following from our volume entitled "A Selection of the Estable Funguses of Great Britain."



Fig. 105.

"*MORCHELLA ESCULENTA*, Linn. Edible Morel. Order, Elvelacel. Family, Ascomycetes. Synonymes—*Phallus esculentus*, Linn. Fl. Suec. 1262. *Helvella esculenta*, Sow. t. 57. *Morchella continua*, Tratt. Fung. Aust. t. 6, n. 11. *Jew's Ears* in Yorkshire. Pileus hollow, conical, irregular, folded, pitted, thin and firm. Stem hollow, but more or less solid at the base, smooth outside, sometimes chambered or perforated.

"The Edible Morel is very variable in shape and size, now appearing oval, now bell-shaped, now all on one side. The flesh is ribbed and rutted, and the pileus looks as if spread over coarse honeycomb, only the hollows are very irregular in form and size, which never occurs in the geometrical structure of the ingenious bees. The colour of the pileus varies from grey to greenish brown. It is found in April and May, preferring grassy places on the borders of fields, and the raised banks of streams in hilly countries.

"From the complaint that Dr. Badham makes, that in England this Fungus is only known as an article procurable at the Italian warehouses, we surmise that he has not been brought up among the thrifty housewives of Yorkshire. In the kitchens of that county, at any rate of the northern and western divisions of it, a string of Morels pendant from the ceiling is as familiar an object as a bunch of Sage twigs or bundles of Thyme; and the heads of the household complain of the cook's neglect if she omits the Morel flavour in certain sauces. As children we knew the plant at sight, and brought it home whenever we encountered it in our walks; and the poor knew it also, for ever and anon the women who gathered Cowslips for the wine-brewing would bring a few in the corner of their basket, and plead for an extra shilling for the 'Jew's Ears,' as they were pleased to call the Morel.

"In Germany the excellence of the Morel was well appreciated, and, finding that it flourished the most luxuriantly on wood ashes, it became a regular system to burn down a portion of the forest annually to secure a crop of Morels. This custom was stopped by an edict of the Government, and thus legislation was turned against the Fungus.

"M. Roques gives some receipts for the dressing of the Morel, which our readers may find serviceable:—

"1st. Having washed and cleansed them from the earth which is apt to collect between the plants, dry thoroughly in a napkin,

and put them into a saucepan with pepper, salt, and parsley, adding or not a piece of ham; stew for an hour, pouring in occasionally a little broth to prevent burning. When sufficiently done, bind with the yolks of two or three eggs, and serve on buttered toast.

"2nd. *Morelles à l'Italienne*.—Having washed and dried, divide them across; put them on the fire with some parsley, scallion, chervil, burnet, tarragon, chives, a little salt, and two spoonfuls of fine oil. Stew till the juice runs out, then thicken with a little flour; serve with bread crumbs and a squeeze of lemon.

"3rd. *Stuffed Morels*.—Choose the freshest and whitest Morels, open the stalk at the bottom, wash and wipe them well, fill with veal stuffing, anchovy, or any rich farce you please, securing the ends, and dressing between thin slices of bacon. Serve with a sauce like the last."

NOVELTIES IN THE ROYAL GARDENS, KEW.

ARNEBIA ECHINOIDES is the chief plant flowering on the Rock-work. It is one of the prettiest of the yellow-flowered members of the Boraginæ, or Borage-worts, and in addition possesses the charm of extreme rarity. Scarcely any other alpine could be mentioned that has been so long in cultivation, while represented during the time by so few individuals. It was introduced to Kew no less than twenty-eight years ago, and for a great part of that time, it is said, has been only in the collection of Mr. Fraser of the Comely Bank Nurseries, Edinburgh. Unfortunately it never produced good seed, and no other means of propagation was possible. The few plants now in this country are due to the energy of Herr Max Leichtlin, who always desirous of obtaining important plants, made special efforts to obtain this, and had the good fortune to find it in one of the continental nurseries. In the garden of the above gentleman at Baden-Baden it grows luxuriantly, while in England, though always pretty, it never attains the development of which it is capable. In the "Botanical Magazine" of 1848 there is an excellent portrait. From a tuft of ovate-oblong spreading leaves it produces several leafy stems, reaching a height of about 6 inches, and these terminate in a scapoid spike of large yellow flowers. Beneath each sinus of the corolla many flowers have a deep purple spot, and these afford the plant a distinct character. In diameter the corolla measures about three-fourths of an inch, and is between funnel and salver-shaped. We can offer no hints on propagation, as hitherto it has produced neither seeds nor offsets. It appears to be quite at home so far as it goes planted out on the rock-work. The surmised reason of its restricted growth is that some necessary constituent of the soil is absent.

There are some other good plants here in flower that do not quite come under the title of our notice. *Arenaria balcarica* may be mentioned in particular. It evinces fitness for a purpose to which few plants can be applied, and this is the covering of rocks with a thin clothing of elegant green, such that will not obscure the form or hide the most diminutive plant behind. The stems of this *Arenaria* are very fine, forming an intricate mass, and the leaves are extremely small. The white star-like flowers are just now thickly sprinkled over the surface.

Houstonia cœrulea is among the smallest of choice alpine, and with numerous flowers of azure blue, is in fine condition. *Trillium grandiflorum* presents the most handsome white flowers that can now be gathered. Other effective plants are *Androsace Lageri* and the annual or biennial *A. lactiflora*, *Hutchinsia alpina*, *Dodecatheon integrifolium*, *Primula cortusoides amœna*, and *Ranunculus amplexicaulis*, which of all the species seems the most chaste and delicate.

In the Economic house is blooming one of the rarest of the genus *Oxalis*, *O. megalorrhiza*. It is known as Rhatany Root.

Caraguata Zahni is in flower in the stove. It was introduced by the Messrs. Veitch, and is by them called *Tillandsia*. The foliage of a fine plant is very handsome, but the chief attraction rests in the inflorescence, which consists of a dense panicle of lemon-yellow flowers, with bracteoles of the same colour. These and the persistent sepals retain their form and beauty of colour for a considerable time, so that the petals which soon fade are not missed.

Several curious and pretty plants are to be found in the Orchid-house porch. *Heterotropa asaroides* is extremely rare and curious. With leaves like *Cyclamen*, it has nearly globular and almost black fleshy flowers, the size of a small walnut. It belongs to the Aristolochiaceæ. *Ixia crispata* has very remarkable and pretty foliage. The leaves along the whole length are finely undulated, and grow from 3 to perhaps

6 inches in length. The flowers are rose-coloured, but rather small. *Scilla natalensis* var. *sordida* is distinct from the species by its purple leaves, which colour is very decided on the under side. *Oxalis cernua flore-pleno* is not at all common, but the flowers are very double and ornamental.

Choisya ternata is a noteworthy shrub flowering in the Temperate house. It is a Mexican member of the Rutaceae, and is said to be hardy in sheltered situations. The flowers are large and white, and in a contemporary recently were suggested as a substitute for Orange blossom. They are said also to be largely used for decorative purposes on the Continent. The trifoliate leaves are of a dark green and very handsome. They should not be bruised, as their smell is disagreeable.

The last, but certainly not the least plant we have to mention, is *Fritillaria recurva*, a new species of a colour closely approaching to scarlet; indeed, there is no other known species of the same tint. After being open for a time the flowers change towards orange or yellow. They are narrowly campanulate, and are said to attain a depth of from 1 to 1½ inch, but in this case they are not so large, probably from the bulbs having been too recently received. The stem reaches a height of from 1 to 2 feet, bearing very narrow leaves of greyish green. It is a native of California, and may safely be considered an important introduction.

EARLY WRITERS ON ENGLISH GARDENING.

No. 18.

WILLIAM BULLEYN.

WILLIAM BULLEYN was a physician as well as a divine, and in him was exemplified the advantage of the two professions being combined. Even now in some remote districts the villagers are indebted solely to the medicine chest of their pastor, administered from by his skill, for remedies in their sicknesses. As late as the year 1780 Dr. Gower was rector of Chigwell, and practised at Chelmsford. Much more desirable was such a combination of professions in the sixteenth century when Bulleyn lived, for then roads were bad and conveyances few.

Bulleyn was a very superior man; not only thoroughly conversant with the natural sciences as then known, but anxious to publish his knowledge for the instruction of others, wrote and published even whilst persecuted and imprisoned, and rendered even the dry details of pharmacy attractive by his jocular style. His friend Thomas Newton truly depicted his characteristics in these lines—

"His pleasant pen, his merry minde, and wit
Did most men please—yes, all of judgement sound;
Tride truth hee tolde, and nayle on head hee hit;
Examples store in all his bookes are found."

We have admitted him into our portrait gallery, not because he wrote on practical gardening, for not a paragraph from his pen on that subject is known to us, but because he was the strenuous advocate of its being more generally and efficiently pursued in this country. He had travelled in Europe and he observed what horticulture could produce, and he had travelled over England and Scotland and observed what horticulture did not there produce, yet was capable of producing.

Between the years 1558 and 1585 he published five works, but being chiefly on medical subjects, the only one we are entitled to particularise appeared in 1579, and has this copious title:—

"Bulleins Bulwarke of Defence against all sicknesse, soarenesse, and woundes that do dayly assaulte mankind: Which Bulwarke is kept with Hilarius the gardener and Health the phisicion, with the Chirurgical to helpe the wounded souldiours. Gathered and practised from the most worthy learned, both olde and new: to the great comfort of mankind, by William Bulleyn, Doctor of Physicke. 1582."

The contents are in the form of a dialogue, Marcellus asking for information and Hilarius imparting it in reply. The first portion of the volume, "On Simples," relates chiefly to plants, fruits, and flowers, and their uses. The author's merry effusions may be appreciated from the following, included in his notes on the common Rush:—

"I myselve did kuow a Rushe growing in a fen side by Orforde in Suffolke, that might have spent three hundred markes by the yeare. A few such Rushes be better than many greate trees and bushes. There sometime I did dwel at a place called Blaxall near to that Rushe," where, he says, "I was nere kinsman to the chieftest house in that town."

Blaxall is a small parish within four miles of Wickham Market, and Bulleyn was instituted its rector in 1550, but being a protestant he resigned the living when Queen Mary succeeded to the throne in 1558. Soon after his resignation of the living of Blaxall he settled in practice as a physician in the city of Durham, and became a proprior with Sir Thomas Hilton in the salt works near Tinmouth Castle. On the death of Sir T. Hilton Dr. Bulleyn removed to London, and became known as a skilful physician and a man of learning. He was elected a member of the College of Physicians about the year 1560. A series of misfortunes now pursued him, but were met by him with that firmness which was to be expected from a man of his strength of mind and true piety. He thus records them:—"This country was sometime the land of a worthy knight, called syr Thomas, the Baron of Hylton, to whom I dedicated my little Booke intituled the *Gouvernement of health*, promisyng in the same Booke to set forth an other booke, wherof the copy perished with my Bookes, in shipwracke: and when I came to London, to have reuiued my dead booke, one William



VV. B.

Fig. 106.—William Bulleyn.

Hilton, gentleman, brother to the sayd syr Thomas Hilton, accused me of no lesse cryme than of most cruel murder of his owne brother, who dyed of a Feuer (sent onely of God) among his owne frends, fynishing his lyfe in the Christen fayth. But this William Hilton caused me to be arraigned before that noble Prince, the Dukes grace of Norfolkke, for the same: to this end, to haue had me dyed shamefully: That with the couetous Ahab he might haue, through false witnes and perjury, obtayned by the counsell of Jezabell, a Vineyard, by the pryce of blood. But it is written, *Testis mendax peribit*, a false witnes shal com to naught, his wicked practise was wisely espyed, his folly deryded, his bloody purpose letted, and fynallye I was with Justice deliuered. Notwithstanding, yet am I by the same William Hilton stil molested and troubled as much as lyeth in him, to shorten my dayes by some meanes or accidente, who with neither lawfull pollicye, nor false testimony, cold he therto accomplish his wicked intent." Whilst in gaol he wrote a great part of his medical works. His death occurred January 7th, 1576.

At the time he lived our gardening was neglected and undervalued; even its commonest productions were so disesteemed that Henry VIII.'s last Queen sent to Holland for salading. In excuse for this inferiority of our garden produce, it was a conclusive assumption to assert that our climate and soil were unfavourable to their growth. Against this unfounded opinion

Dr. Bulleyn stood forward the patriotic, and we may add the successful opponent; for although the error would naturally have a tendency to correct itself, it is too much to consider that the opinion of a man of his estimation would be delivered without effect. From this period our practical horticulture was more attended to, and with its improvement the embassies to Holland for a salad ceased.

His "Government of Health" is a dialogue between John and Humfrey. The latter often replies in verse. It contains a few gardening notes, such as, "There is a kind of pears growing in the city of Norwich called the Blacke friers pears, very delicious and pleasant." Of Apples he knew "the Costard, the Grene Coate, the Pippin, the Queene, and so furth." In his "Regiment against the Pleurisy" he gives as his rule of life—"Diet, quiet and meriman, and where verie needs is to use phisicke, and not for every trifle." Bulleyn cured Sir W. Hilton's wife from a tympany with a bread made of aniseed and herbes; he also testified for the same "disease to the virtues of Dittany of Crete, which grew plentifully on the rocks of Tynemouth." This probably was *Lepidium latifolium*—Broad-leaved Dittander—which is there plentiful. Writing of the Daisy he says, "With this herb *Bellis* and other good medicines I did recover one *Bellis* not only from a spile of the palsie, but also from a quarten, who afterwards sought divers wayes to have murdered me." This was R. Bellasis of Jarrow, Durham. The grave in which Bulleyn was buried in St. Giles's, Cripplegate, contains also the remains of his clerical brother Richard, and of Fox the martyrologist. A Latin inscription commemorates them conjointly, of a part of which the following is a translation:—"Under this sacred stone rest three intermingled bodies of William Bullen, physician, and of his brother Richard, and of John Fox; which three, believe me, were in learning surpassingly excellent, and equals in piety. William Bullen was ever ready to administer medicine, equally to the poor as to the wealthy."

OUR BORDER FLOWERS—WOOD SORREL.

SINCE the introduction of *Oxalis striata* to our collections of plants, said to have been in 1658, what additions have been made! Many of them, I fear, are only known to exist on paper. To how many countries we are indebted for many of our choicest border flowers! Though numerous, the *Oxalis* family is far in the background as regards being known and seen in cultivation, or shall I say less cared for now than formerly? And again we may come across a kind or two that will live in spite of being neglected. In some of our old establishments these plants used to be cared for, but with the old-fashioned gardener the old-fashioned plants too have passed away. It would require a more expert pen than mine to tell of all the merits of this charming race of plants; suffice it to say that in my youthful days it afforded me much pleasure to tend *Oxalis Boweana* as a stove plant, and was well repaid by its profusion of lovely flowers on a sunny morning in spring, but this plant of late years has done us service as a border flower, and in favourable places will stand our winters; but the safest plan is to lift the plants in autumn, pot them in spring, and plant them out at leisure. They should be carefully dried and kept in sand in a cool dry place free from frost. This will apply to the bulbous kinds. They succeed well in a sandy loam with well-decomposed dung or vegetable matter. Preferring a moist but not wet situation, they should be provided with thorough drainage, yet be watered when required.

I think that *Oxalis acetosella* points in the above direction, hiding itself in the shade and moist hedgebanks. *Oxalis floribunda* is a most desirable kind. I believe it is perfectly hardy, a most profuse-blooming kind, its beautiful pink flowers claim for it a first place in our estimation. In lines or patches this is a very effective plant, so are many of the other kinds. They make a grand display on the rockery. They are deserving of far more extensive cultivation than they are at present receiving. Perhaps the best-known plant in this family is *Oxalis tropaeoloides rubra*, which does us good service in the bedding department. I cannot dispense with it where dwarf plants with bronzy foliage are required.

These notes are submitted as supplementary to the remarks on this family of plants which appeared on page 325.—VERITAS.

ROYAL HORTICULTURAL SOCIETY.—At a general meeting of the Society held May 3rd, Lord Alfred S. Churchill in the

chair, the following candidates were duly elected Fellows of the Society—viz., Edward Bright, Miss E. Campbell, Reginald J. Cooks, Arthur Duke Coleridge, and the Tiverton Horticultural Society. Charles May, gardener to J. S. Bockett, Esq., Stamford Hill, was elected as a *bonâ-fide* gardener paying 10s. 6d. per annum.

NOTES ON VILLA AND SUBURBAN GARDENING.

As the season is advancing activity in every department must now be the order of the day, and nothing must be neglected for the want of a few hours' extra work. In the kitchen garden all crops in a sufficiently advanced state must be either hoed and earthed-up as the case may be, and the plants of Onions, Turnips, Beetroot, Parsnips, and other crops must be thinned out in time, as by that the crops have a much better chance to grow out than if they were left to crowd each other, as is often the case. Witness the effect upon a crop of Onions if left too long without thinning. If left too long it is impossible to perform the thinning without injury to those remaining. The same may be said with regard to other crops in proportion to their habits of growth. Hasten on the early Cabbages by planting them out at once, and the plants from the earliest sowing of Brussels Sprouts must be pricked out forthwith.

Chicory, so useful for salads by forcing in winter, must be sown at once on rich ground. No doubt many will be trying the Witloof this season, a very vigorous and productive kind of Chicory lately brought before the Fruit Committee of the Royal Horticultural Society and approved of by them. Make another sowing of Turnips, Peas, and Beans, and sow the main crop of Scarlet Runners. This vegetable is made the most of about London and other large towns, for nearly every piece of wall which can be made available is covered during the summer with Scarlet Runners, which are both ornamental and productive.

Advance as much as possible the crop of Celery by having the plants pricked out on a shady border, and in the meantime dig all the trenches out and let the space between them be utilised for some early-maturing crop.

In the flower garden let the beds be finally prepared for the plants, and put out all half-hardy plants for edgings; and if the plan of planting has been decided upon, such plants as Golden Feather Pyrethrum, Gazanias, Calceolarias, Lavender Cotton, Pansies, and many other plants usually grown for summer decoration may be planted at once, leaving the general bedding-out for a week or two longer until the weather is more settled and warm nights come on. In the mixed border many plants may be now put out among and to succeed the spring flowers that are now in bloom, more especially if the borders are sheltered. Put stakes to Sweet Peas and other tall-growing plants in these borders. It enhances the pleasure of those places where everything is kept trained and tidy instead of being allowed to fall about.

In the rock garden where Alpines are growing and flowering, see that they are not overgrowing each other, or to the exclusion of the more delicate kinds. Here, too, no doubt there are places which may be filled-up with plants that will flower later on. In the hardy fernery it will be best to put a stick to each of the delicate and more tender plants as they spring up, so that they may be looked to, and not be buried by the coarse-growing sorts. Many are annually lost in this way.

In the greenhouse there will now be a little more to look to. For instance, Heaths and Epacris that are making growth after being out back may now be potted, and for a time kept slightly shaded and warmer, though not by any means in strong heat. They require to be potted firmly on account of the fine nature of their roots. Take care that before potting is done that they are not wanting water, as if so when they are turned out half of the roots will stick to the sides of the pot and the plant become injured. Azaleas out of bloom may, if commencing growing, be potted. These like firm potting and to be freely syringed daily in a little heat—sun heat will be sufficient if the house is closed early in the afternoon. Deutzias and other plants that have ceased flowering may also be potted if necessary. A close frame for a time does them no harm, though it is not absolutely necessary; but it is only on account of the plants having been forced into bloom, and are probably intended to be forced again, that the frame is recommended.

Attend well to young Fuchsias intended for autumn decoration, likewise to Achimenes, Gesneras, Balsams, and Chrysanthemums, and any other plants intended for the same purpose.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

The largest proportion of our fruit trees in the kitchen garden are pyramids and dwarf bushes. It was necessary to go over all the Cherry trees last season to cut out many of the branches

with a saw close to the main stem owing to the branches becoming too crowded. The result of this was that last year the crop of fruit was heavy in quantity and superior in quality. Previously neither light nor air could penetrate to the centres of the trees, and only the fruit that hung on the outer branches coloured well or was of good flavour. Other sorts of fruit trees require similar treatment, and we do a little thinning-out almost every season both upon bush and pyramid trees.

In our light gravelly soil Apple trees have a tendency to canker, and the worst are Ribston Pippin and Wellington or Dumelow's Seedling. The first one is of the most favourite dessert sorts, and the other is almost unsurpassed for late use in the kitchen. We are still using it plump and fresh. The most evident reason for the trees becoming cankered is the roots getting down to unsuitable subsoil. We find at least that to lift the roots nearer the surface, and to work-in fresh loam amongst them, prevents the canker from spreading.

The trees have been examined in order to destroy maggots and caterpillars in the earliest stages of their existence. A very small maggot similar to that which eats the Rose in a bud state has been found in the unopened bunches of Apple blossoms. One specimen destroys many blossoms in a bud state. The maggots have been destroyed by hand-picking.

Our Peaches and Nectarines, finer sorts of Pears, Plums, &c., are cultivated in the orchard house, but this does not prevent us advising as to wall treatment. The trees now require constant attention as to disbudding and thinning-out the fruit. Some sorts have not only a greater tendency to drop their fruit, but are shyer bearers than others. Some of the most free-bearing Peaches are Early York, Royal George, Grosse Mignonne, Bellegarde, Galande, and Prince of Wales; of Nectarines, Hunt's Tawny, Bluge, Violette Hâtive, Pine Apple, and Victoria. We continue to keep the Dutch hoe at work amongst trees and bushes.

ORCHARD HOUSE.

All the trees have now passed the blossoming period, and there is a remarkably good set of all the varieties. Now that this stage is reached the garden engine is kept at work daily. Peaches and Nectarines receive the greatest share of attention. The growing shoots have not yet been stopped, but it is necessary to stop them. By this plan short-jointed young wood is produced, which is very fruitful and causes the trees to be more compact than they would be if the young wood was allowed its own way. The fruit is also being thinned out, and we do not care to make many thinnings of it, as in a ten-years experience and the culture of scores of trees there has been no trouble whatever with the fruit dropping off.

Strawberries on the shelves have been allowed plenty of space by the thinnings being removed to other houses. The plants are now showing bloom, and in working the garden engine care is taken not to dash the water against the flowers with force. When the blossoms are set sticks are placed to the trusses to hold the fruit up above the foliage. It is also very necessary to syringe the plants well underneath the leaves to prevent the appearance of red spider.

Figs in Pots.—These are now making very rapid growth, and it must be encouraged by frequent waterings with weak manure water, or the pots may be surface-dressed with some very rich soil—say equal quantities of loam and rotted manure, with some pounded charcoal mixed with it. It is astonishing to see the rapidity with which fresh rootlets are formed in this dressing, and the rapid effect it has upon the growth of the trees. Our Fig trees are daily syringed, and although the pots require liberal waterings it is quite possible to overdo it. Some gardeners do not approve of syringing their Fig trees, but this is a mistake. It is the best way to keep off or destroy red spider, and the health of the trees is improved by it. There is no danger of Fig trees in pots being overgrown, unless the variety should be a shy bearer and of a very robust growth. It is easy to check this over-luxuriance by withholding water and omitting the surface-dressing.

VINEYRIES.

Late houses that have had but little or no artificial heat to start the Vines now require considerable attention, as the young growths are making very rapid progress, and now is the time to see that they are carefully and regularly distributed over the trellis to which the Vines are trained; and this operation requires much care, as the succulent shoots are so easily snapped either in the tying down or in a few hours afterwards. They must be bent down a little at a time until they are in the right position. Many amateurs, and others who have not had much experience in the culture of Vines, are apt to tie down too many shoots, thinking no doubt that the more wood they allow the Vines to mature the more bunches they will have; but no greater mistake can be made than this, as if the house is crowded with leaves and growths none of them can be well ripened. All our Vines are trained on the close-spur system, except Canon Hall Muscat, Golden Champion, and Gros Guillaume (Barbarossa); of these three or four good eyes are left at each spur when the Vines are pruned, and the old rods are replaced with young canes at more frequent intervals than is necessary in the case of such sorts as

Black Hamburg, Buckland Sweetwater, Lady Downe's, Mrs. Pineo, Bowood Muscat, Muscat of Alexandria, Black Muscat of Alexandria, and Royal Ascot.

At Loxford Hall there are Vine rods of ages varying from one to ten years or more, but when the rods become aged and have been spurred-in nearly ten years the bunches produced are very small, the best fruit being invariably cut from the young canes, one or two being trained-up annually to replace the older rods.

In the early Muscat and Black Hamburg houses the fruit is swelling off and colouring remarkably well. A little water sprinkled on the paths and surface of the borders is all that is required at this time and until the fruit is ripe. A little air is admitted at both front and back of the houses night and day, air being admitted very freely by day when the weather is warm.

GREENHOUSE AND CONSERVATORY.

As the earlier-flowered plants are being removed, hardwooded and other plants are taking their place. Cinerarias will continue in beauty for at least three weeks yet; but the flowers that begin to fade are removed at once. Seedlings for next year have been pricked out, about ten or a dozen plants in 5-inch pots. We use a compost of loam and leaf mould, with a little sand to keep the material open. Azaleas are late this year; but the earliest of those that have not been forced will be in flower as soon as the Cinerarias are removed. They are free from thrips and red spider. If they were not we should dip the small plants in soapy water in which a little tobacco liquor had been mixed. Thrips may be destroyed by fumigating with tobacco smoke, but this does not touch the spider.

Forced Roses are most beautiful objects at this time, and but little forcing is required to have them. They must be free from green fly before the flowers open. The bud worm is also a troublesome pest.

Pimeleas are very attractive plants, and the flowers are useful for cutting. The flowers of *P. spectabilis* are just now opening. The plant has been kept in a rather warmer temperature than that of an ordinary greenhouse. It is the most beautiful of the family, but it has not been seen well shown at the London exhibitions recently. The plant does not like a draught of cold air, and the leaves are liable to be attacked by red spider. When the plant is making its growth it should be carefully watched and syringed, and the syringe must also be freely used if necessary up to the time the flower trusses open. To grow this and other plants that require a warmer position than the ordinary greenhouse, the end of the house nearest the stovehole is kept closer, and the temperature usually ranges about 5° higher at night. In this position the North American *Cypripediums* grow and flower freely. *C. spectabile* has been really splendid the last few years, and the plants continue to increase in strength and produce more flowers annually. *Gleichenias* also do well, and in a close case the Filmy Ferns luxuriate. The glass over this part is shaded closer than the other part where *Pelargoniums* and other plants of that description are making their growth.

Hovea Celsii is also in full beauty; but that is quite a greenhouse plant, and requires plenty of fresh air. It must be carefully supplied with water at the roots, over-watering causing much injury. *Pleroma elegans* and *Statice Holfordii* are really fine plants, and they seem to flower more strongly and are in better health if they are placed in a night temperature of 56° with a rather close moist atmosphere. In hot dry weather stage and other *Pelargoniums*, if the pots are well filled with roots, will require abundant supplies of water at the roots.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

WESTMINSTER AQUARIUM. May 16th and 17th, May 30th and 31st, July 5th and 6th.

CRYSTAL PALACE. Flower, May 19th and 20th. Rose, June 16th and 17th. TVERNON. May 24th and 25th. Messrs. A. Payne and J. Mills Hon. Secs.

UNIVERSITY. May 31st. Mr. T. H. Clough, Hon. Sec.

MARLBOROUGH (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.

SOUTH BROMTON. June 5th, and August the 5th and 7th. Mr. C. S. Fridge, 89, York Street, Sec.

SOUTH EASEX (LANTON?). June 18th. Mr. G. E. Cox, Wilmet Road, Leyton, Sec.

IPSWICH.—June 15th, July 6th, and September 17th. Sec. Mr. W. B. Jeffries, Henley Road, Ipswich.

EDINBURGH (Scottish Pansy Society's Show). June 16th. Mr. N. M. Welch, 1, Waterloo Place, Edinburgh, Sec.

COVENTRY. June 19th. Mr. T. Wilson, 3, Portland Terrace, Sec.

MAIDSTONE (Roses). June 21st. Mr. Hubert Bensted, Rockstow, Maidstone Sec.

FARHAM AND SOUTH HAMPSHIRE. June 21st. Mr. E. Smith, Sec.

SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.

EXETER (Roses). June 23rd. Mr. T. W. Gray, Hon. Sec.

BRIGATE (Roses). June 24th. Mr. J. Payne, Treasurer.

BURTON-UPON-TRENT. June 26th. Mr. F. S. Dunwell, Sec.

LEADS. June 28th, 29th, and 30th. Mr. James Birkbeck, Delph Lane, Woodhouse, Leeds, Sec.

RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.

WEST OF ENGLAND (HEREFORD). Roses. June 29th. Rev. C. H. Bulmer, Crodenhill, Sec.

FROME (Roses). June 29th. Mr. A. B. Bally Hon. Sec.

WIMBORNE (Roses). June 29th. Mr. C. Parker, Hon. Sec.

TORRAT. June 29th and 30th. Mr. W. F. Tucker, Capt. Braddon Tor, Hon. Sec.

OXFORD (Roses). June 30th. Mr. C. B. Bidley, 115, Aldate's, Hon. Sec.

BROCKHAM (Roses). July 1st. Rev. A. Charles and Mr. C. Mortimer, Secs.

MARDEN. July 1st. Mr. J. H. Edmondson, Hon. Sec.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY. July 5th and September 13th.

OUNDLIE. July 5th. Mr. Alfred King, Sec.

SOUTHERPORT. July 5th, 6th, 7th, and 8th. Mr. E. Martin, Sec.

NEWARK (Roses). July 6th. Mr. F. R. Dohney, Sec.

ALEXANDRA PALACE. Roses, July 7th and 8th.

BALING, ACTON, and HANWELL. July 11th (at Fordhook). Mr. B. Dean, Baling, Sec.

HELENBURGH (Roses). July 12th and 13th. Mr. J. Mitchell, Sec.

WIMBORNE. July 12th and 13th. Mr. P. Appleby, 5, Linden Cottages, Hon. Sec.

KILMARNOCK. Roses, July 18th and 19th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.

TOWNBRIDGE. July 19th. Mr. W. Blair, Hon. Sec.

WRETHAM. July 25th. Mr. J. B. Shirley, Hon. Sec.

READINGLEY. July 26th and 27th. Mr. T. Atkinson, Burleywood, Headingley, Leeds, Sec.

BREHOUSE. July 29th. Messrs. C. Jessop & E. Rawnsley, Hon. Secs.

KILSEY (Flowers). August 1st. Mr. C. E. Bracebridge, Sec.

HEWORTH (Horticultural). August 2nd. Mr. R. H. Felton, Hon. Sec.

RAWTHORPE (ROSENDALE). August 4th and 5th. Mr. M. J. Lonsdale, Sec.

TAUNTON DRAME. August 10th. Mr. F. H. Woodford, M.D., and Mr. Clement Smith, Hon. Secs.

FILEY. August 11th. Hon. Sec., Mr. Walter Fisher.

OLAY CROSS. August 15th. Mr. J. Stallard, Olay Cross, near Chesterfield, Sec.

WESTON-SUPER-MARE. August 15th and 16th. Mr. W. B. Frampton, Sec.

PRESTON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.

SHREWSBURY. August 16th and 17th. Admire & Naunton, Hon. Secs.

MILFELD HORTICULTURAL. August 19th. Mr. George Senior and Mr. John Rushforth, Hon. Secs.

NEWBURY. August 22nd. Mr. Henry Seymour, Hon. Sec.

RANSGATE (ISLE OF TRENET). August 23rd. Mr. R. B. Scharten, Broadstairs, Sec.

SEATON BURN. August 26th. Mr. R. Richardson and Mr. W. Elliott, Secs.

MONTROSE. September 1st and 2nd. Mr. Alex. Burnett, 3, High Street, Sec.

DUNDY (International). September 7th, 8th, and 9th. Mr. W. R. McKelvie, 26, Euclid Crescent, Sec.

GLASGOW. September 12th and 13th. Mr. F. G. H. Doughall, 167, Canning Street, Sec.

TRADE CATALOGUES RECEIVED.

Messrs. Dick Radcliffe & Co., 129, High Holborn, London.—*Catalogue of Plants and Garden Requisites.*

Messrs. Thomas Bunyard & Sons, The Nursery, Maidstone.—*Catalogue of Bedding Plants, Roses, Climbers, &c.*

Messrs. Francis & Arthur Dickson & Sons, "Upton" Nurseries, Chester.—*List of Florists' Flowers, Bedding Plants, &c.*

TO CORRESPONDENTS.

*. All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (Pater).—You cannot have a better companion than "The Sportsman's, Tourist's, and General Time Tables, and Guide to Scotland."

PINK AZALEA (M. B.).—We cannot name varieties. Why not propagate from your old plant?

ROCK PLANTS (Bierley).—Whether in the nurseryman's catalogues or not, write for the plants; any nurseryman could procure them for you.

DEFORMED CUCUMBERS (Dot).—The heat of the bed has been irregular and suddenly declined. This has checked growth and induced mildew. Attend to the suggestions we made before, which are still more needed, the winds and the nights are so unseasonably cold.

TRUFFLES.—We are said to have Truffles in our clays. Will some of your readers tell me the way to find them, and the proper season?—R. H.

ABNORMAL POLYANTHUS (Bristolian).—It is not usual of course, but the enlargement of the calyx so as to be leafy is a transformation to which most flowers are liable.

PROTHYM TWAX (J. M.).—It is not unusual for it to flower in England.

WATERCRESS IN A BORDER (G. G.).—Plant slips in September in a moist shady border, and the only cultivation necessary is to dig the earth fine, to draw a slight trench with a hoe, to fill this with water until it becomes a mud, to cover it about an inch deep with drift sand, and then to stick in the slips about 6 inches apart, watering them until established. The sand keeps the plants clean. They will be ready for gathering from in a very few weeks, and the shoots should be invariably cut, and not plucked. They are not so mild-flavoured as those grown in water, but then they are free from aquatic insects, &c.

POLYANTHUS GRUB (J. P.).—We could detect no grub. The specimen was dried-up.

DANIELS' KING OF THE BROCCOLI.—Mr. J. Bray writes to us that this is

one of the best late kinds; the heads are white, firm, and close, and very well protected.

CYCLAMEN AFTER FLOWERING (Geranium Cottage).—The plants will be quite safe in the frame for the next six weeks, or until the middle of June, when we should plant them out in an open situation in the garden, and in the autumn take them up and pot them in turfy loam with a third of leaf soil added and intermixed, removing most of the old soil prior to potting, draining the pots liberally, and after potting placing them in the frame on ashes and keeping the soil moist, shading from bright sun until established. Admit air moderately, and keep the plants safe from frost. They will in all probability flower as well in the coming winter and spring as they have done in the past season.

PLANT LEAVES SCORCHED (R. W. C.).—The leaves sent are those we think of *Spiraea japonica*, which are very susceptible of injury from the fumes of an ill-constructed fire, and equally so of tobacco smoke. Either there has been an escape of smoke from the fire or the house has been fumigated with tobacco, which has so frequently scorched the leaves of this plant that we now always remove the plants before fumigation, not returning them to the house until the following morning, and since we practised this have been well repaid the trouble. If the house has not been fumigated see that the fire is smoke-tight.

WALNUT TREES BLEEDING (Mrs. Grounds).—We fear it will hardly be practicable to dry the wound, but we should nevertheless endeavour to dry it. The branch we presume has been sawn off so as to remove any raggedness or splinter by a transverse cut, and to this apply red-hot irons, which will char and close the pores of the wood; and when dry, if you can succeed in drying the wound, apply patent knotting as used by painters, giving two or three coats.

LOBELIA CULTURE (Kestonworth).—If your plants of the scarlet *Lobelia Queen Victoria* are now strong, say if the foliage is 8 inches in length, they will make a display in the autumn. The soil for these plants cannot be too rich and deep, and the plants must have unlimited supplies of water throughout the season. If your plants are very small plant them in a nursery bed for this season, potting them in the autumn, and you will have a fine stock of vigorous plants for the spring of 1877.

GRAPES SPOTTED AND SHAKEN (A Gardener).—The roots do not supply sufficient sap. Water copiously, and give manure water once a week. Cut out all the diseased berries. Perhaps you have too many bunches on the vine.

CONVOLVULI ON STANDARD ROSES (Sutton).—They will not injure the Roses if only allowed to entwine the stems; but their roots would rob those of the Roses unless the Convolvuli were grown in pots. Urine is too stimulating as a manure; pour it over garden refuse, and use the compost when decayed.

SKEETINGS (D. D.).—This is the local name about Ashford in Kent for the Orchids. It may be derived from two Anglo-Saxon words—*Sceafas*, a robber, and *lag*, a special district.

PRUNING MARSHAL NIEL ROSE (F. T. P.).—We have found the best practice in pruning this fine Rose under glass to be the removal immediately after flowering of the principal shoots which have produced the flowers, being careful to cut to a point from whence healthy shoots are issuing. These young shoots are trained thinly, and are not stopped or pruned either during summer or winter, except to keep them within bounds. Cut out all the old wood you can, furnishing the space with new growths. Afford plenty of water to the roots—liquid manure if needful—and you will have a "golden harvest" next year. This Rose does not produce its flowers nearly so freely or so fine from spurs on the old wood as from the eyes of young shoots. Shoots produced even as late as September flower freely the following spring. With liberal treatment your plant will produce shoots from 6 to 20 feet in length during the season. Let this be your aim—young wood, but do not permit any overcrowding of the shoots and foliage.

NAMES OF FRUITS (J. L.).—Uvedale's St. Germain. (*Misc N.*)—Northern Greening.

NAMES OF PLANTS (Almer).—*Staphylea pinnata*, or Bladder Nut.

POULTRY, BEE, AND PIGEON CHRONICLE.

JUDGES.

We little thought when we wrote last week on poultry clubs, and mentioned that there were plenty of men who would make good judges, that we should so soon be asked from several different quarters to take the matter up. It shows undoubtedly that there is a want in the fancy for fresh judging blood, and perhaps that some are far from satisfied with present arrangements. This latter matter, however, we will not go into, as dissatisfied exhibitors and people who think themselves wronged must make their own complaints and themselves show up their own private grievances. We feel, however, that there is a great need just now for competent men as judges, not because we do not think the gentlemen who now perform these arduous duties are in every way as good adjudicators as formerly, but because they are themselves in number quite insufficient for the many exhibitions which will soon again be held in nearly every county. Sometimes there are a dozen shows or more in a week, and this often necessitates a judge nearly living in a railway carriage and rushing about all over the country. Often, too, then the work which should take several hours is hurried over in a short space of time, to catch some train and to be at another exhibition in due time.

About our present judges we will say nothing. They are mostly men who are so well known that we can say nothing new of them. We have ourselves won prizes with nearly every one of them, and so we do not feel aggrieved, and many of them are standing dishes, and if it were possible we should not mind seeing them on most occasions, but it is not possible, and that again brings us to the subject of new judges.

The great difficulty, the very great difficulty, is, of course, to find persons who are good all round. There are so few who really have a critical knowledge of all breeds. They may think they have, but when it comes to the point the standard of some breed is found wanting. We know we should feel very loth ourselves to be put down to award the prizes in some of our most fashionable breeds. There are two great difficulties which to a very great extent keep many fanciers from ever attempting to judge a show. They are—first, the continual difference of style which some of the great judges and breeders go in for; and secondly, the knowledge that a mistake will never be forgotten when once made by a new hand. No allowance, they think, will be made, and so gentlemen who would soon make good judges are quite kept in the background. Really we do not wonder, for never shall we forget the disgraceful proceedings which followed an award made last autumn at one of our greatest shows, and in this case it was made by an old and experienced judge; but the disappointed exhibitors took it into their heads that the award was wrong, and not only every word was said against the judge who made the award which could be said, but also against the owner of the birds which won, who himself was perfectly unknown to the judge. Anyone who heard what was said then would certainly think twice before he undertook to judge a show.

The first of the difficulties we mentioned is a serious one, for some years in Brahmas or Coochins markings may carry all before them, the next year perhaps leg-feathering, and the next year size, and so on, which makes the system of awarding prizes appear very inconsistent; but as for the second difficulty, that is more in the hands of the exhibitors themselves. If they feel they want fresh and new judges, let them not be too ready to frighten a new hand out of the field by unnecessary grumblings, for it often appears to us that a judge's awards, if he is young at the work, are found fault with systematically because they come from a fresh hand. We feel that every consideration should be made with an award from a new judge, unless it is very glaring indeed; and even then moderation in feeling might be shown, for we are sure that in the past season glaring errors in awards were made on many sides by even the most experienced judges.

To return, however, to the new judges which are so much required, since their number has hardly increased at all, and the exhibitions are certainly ten times more than they were. We think there are several fanciers who would very soon be found suitable, and we should like to see some society bring them out, for we still have in our ranks exhibitors who have been real fanciers for nearly a score of years, and who have come into contact in that time with most breeds and breeders, and so learnt the points even of breeds which they have not kept. Such gentlemen would, many of them, take their turn at judging we daresay if properly used. We do not mean for them to become regular judges from show to show, but every now and then to take the adjudication of some exhibition. We should anyhow by that means get our company strengthened, for they would be well-known men, who have battled for years against the breezes of shows and the different awards made at them. Now and then one comes across an advertisement stating that the advertiser, whose name is quite unknown, will be delighted to judge any show, for he has given much time to the subject, and so on. We do not wonder that their services are so rarely required. We can only feel amazed at their own self-confidence. Such men we do not of course mean to be enrolled in the list of judges we should like to see, for though they may be to a certain extent qualified for the work, we can quite understand the public showing a want of belief in them. We repeat, the new judges should be selected from gentlemen who are not poultry novices, but who are known to be practical and experienced men.

We confess we should like above everything to see some large and influential show judged entirely by well-known and experienced amateurs. We once thought we should have had this pleasure when the "National Association" was formed (or whatever it was called) two or three years ago, but, like the paper which brought it into existence, we conclude it has passed away, and is to be numbered among the failures of the past; still their show, which once was in a promising state, was to have had separate amateur judges we heard for each variety, and we think the plan would soon have found favour. Of course such a system could be only carried on at large shows, where each variety had several classes, and the Crystal Palace with its large staff of judges perhaps comes the nearest to it of any show extant. We wish, however, either it or the Alexandra would yet further augment their number of judges, and put such breeders and exhibitors as Messrs. Cresswell and Burnell among the Dorkings, or Messrs. W. A. Burnell, Wragg, and Beachy among the Coochins, or Messrs. Lingwood, Sagar, and Haines among the Brahmas, and so on. Of course it would be impossible for men to be judges and exhibitors at the same time, but if once the adjudicators would at that show forfeit the honour of prize-winning the show would lose no money in entry fees, for the public would feel that there was more

chance for the outsiders when the great guns were not exhibiting, and they would feel confidence, we feel assured, in these practical judges, and so enter accordingly. We do not for a moment suppose either of these two great shows will start such a method of awarding the prizes, but even in a much modified form it would prove useful we verily believe; anyhow, we should like, and so would very many more, to see the plan fairly tried.—W.

SPANISH COCK WITH EXCESSIVE FACE.

ALLOW me to give you my experience in this matter. As my poor bird was nearly blinded, I took as a last resort a friend's advice, and with a sharp pair of scissors cut away the folds of skin which obstructed the eye, and the treatment was effectual. It hardly caused any pain, and immediately the cock was released he began crowing lustily, and called his hens to him, and has been a gayer bird ever since. I have seen the same operation performed on another Spanish cock with the like favourable result.

At an exhibition such a proceeding would probably go against a bird, but if properly done it detracts none of his good looks, and is the really humane course to follow; for it was distressing to see the poor bird before the operation hardly able to find his food, and knocking himself against the perches when attempting to roost.—A. E., Birkenhead.

POULTRY AND BIRD NEWS AND QUERIES.

It is an old saying that Swans only hatch in a thunderstorm, but there is no proof that there is any foundation for it.

Carolina Ducks will not nest on the ground. They, in common with the Muscovy, the Egyptian Geese, and the various Whistling Ducks perch. If a pollard stem be put in the middle of the water they will very often find a hollow in which they lay their eggs. If they have nothing of the sort they must be supplied with a hutch like a dog-kennel fastened to a pile driven into the bottom of the pond. It must be above the water, and should have a ladder made of boards nailed at intervals on a narrow plank reaching from the hutch to the water. It should be long enough to be of use in the event of the water getting lower.

We wish to begin a rookery. We have the trees, but cannot induce the birds to frequent them. Can you help us?—Caw.

Are small chickens hurtful in a garden?

INDIGNANT.—Speaking of the Massachusetts law making it necessary that a "dozen eggs weigh 1½ lb.," Max Adeler says, "We approve of this. The hens have too long had their own way in this business of laying eggs, and they have constantly defrauded the public. It is high time this outrage was crushed, and we are glad that the Legislature of Massachusetts is going to do it. If free American citizens are to be imposed upon with impunity by debauched and corrupt chickens the government for which William Penn fought and John Hancock died is a disgraceful failure. Hereafter Massachusetts hens will either have to lay two-ounce eggs or emigrate. The people will submit to their tyranny no longer. They have borne the yolk until it has become unendurable. They denounce present prices for present eggs as egg-torture; and, hence, they demand a reform with the determination to draw up this chicken bill and pullet through the Legislature."

Mr. Prescott of Dalton Grange, near Wigan, tells us that there is now to be seen sitting on five eggs a Robin who has chosen the following rather curious place in which to build her nest. In an angle of a wall in a potting shed constantly frequented by gardeners there stands a birch broom, and another leaning against the wall, the brush part upwards, and the birch broom being the outermost. The Robin has made a solid foundation of leaves in the whalebone broom between the birch broom and the wall, and on that has built her nest. During Mr. Prescott's absence from home his men have been engaged on a piece of draining, hence the brooms have not been used the last week or two, of which opportunity the Robin has availed herself.

Mr. W. F. Clark of The Park, Nottingham, has a hive of black bees that has sent out a large swarm on Saturday, the 6th of this month. This is very early, as we have had such a very unfavourable spring for bees. The stock has had no artificial feeding.

PACKING EGGS.

We have before us one of Chapman's boxes for transmitting eggs. It is for two sets of eggs; and when the box is not required for that purpose, the divisions being moveable, it can be used for fish, fruits, &c. Lord Penrhyn has them for forwarding trout to his town house from Bangor. The eggs should be packed in chaff; no nails, screws, or tacking-on of direction is required. The single-tray boxes for twelve eggs can be made with lock and all complete, and duplicate keys, for 8s. 6d.; for

two sets of eggs for 5s. Each box is ironbound, has a padlock and two keys. They are very good.

WHARFEDALE SHOW OF POULTRY, &c.

THE annual Show of this, the oldest Society in Yorkshire, was held on the 5th inst. for poultry, Pigeons, &c., most of the agricultural belongings having been exhibited on the previous day. The entries were nearly six hundred in the sections on which we write.

Game headed the list with eight classes, but as a lot they were not good. Some of the winners, however, were all that could be desired, the cup being awarded to a grand Duckwing cock; Messrs. Adams, Martin, and Mason showing well up to the mark. *Spanish* were a small lot of rare merit, the cup pen of the previous day at Epworth having to drop third. *Cochins* were good, the first and third Buff and second Partridge. Dark *Brahmas* a fair class; the birds in one pen had diseased feet. Light moderate, except the first, which were very good. *Dorkings* a grand lot and all noticed, as also *Polands*, in which class the cup for this section was awarded to a capital pen of Silvers. *Hamburgs* were very good, most of the prizes being carried off by Mr. Beldon, the cup going to Silver-pencils, which pen contained one of the best marked pullets we have ever seen, the next in point of merit being the first in Black Hamburgs. *French* were good, with the exception of one or two pens. *Bantams* were a capital lot. First in Black Reds contained a grand hen, but the cock in a strong light is too dull in colour, though very good in style. The first in Brown Reds were old birds, capital in colour and stylish. In the next class Duckwings were first and third, and Piles second, a fair lot. In single cocks the cup was awarded to a grand Brown Red, which, if we mistake not, we have seen in similar performances before; second also good. Black Bantams were the largest class of this section and the winners very good. First a neat pen with all the grand properties of this breed—viz., well spread and ample tail, short legs, and full chest; second and third larger and longer in leg, not so good in comb but better in earlobe. In the next class Whites of rare quality were first, Silver Sebrights second, and Gold third. For the time of year *Ducks* were very good, and *Geese* a capital lot.

Pigeons were about the best the Society has ever got together. In Carriers the cup Black cock at Epworth also secured the cup here for the best bird in the Show; the second Black, and third Dun. Pouters, first Red, second Blue, and third Black. In Barbs the winners were Black, all old birds, and somewhat gone in eye. The winners in Jacobins were Reds. Dragons mustered well, but we could not understand the first award, which was to a Grizzle with no property but colour, being had in both head and beak. Second and third were Blues. In Tumblers first was a neat Almond cock, second a well-known Kite, and third an Almond hen of rare ground colour. Long-faced Tumblers were first and third Red Mottles, and second Blue Bald. Fantails a good class. In Turbits first was a Silver, second Yellow, and third Red, all spike-headed and very good. Trumpeters were of the usual Russian type. In English Owls we preferred the third, and would have placed this first, it being far superior in head properties to any other. The little wonder from Kewbridge was first in Foreign Owls, second and third being Whites. Magpies were all noticed, and a good lot. Antwerps were a large section and very good, the classes for cocks as usual producing some grand specimens, and foremost among these was the Blue Short-faced cock to which the cup was awarded, and which we consider the best Short-faced bird in the fancy as regards head and beak properties. In the Variety class first was a Satinette, second a Blondinette, and third an Ioe; and in the Selling class the cup was awarded to a capital Red Barb.

Rabbits were about in proportion to the encouragement offered them. In Lops first was a Tortoiseshell doe, second a Black-and-white buck not in as good condition, and third a Fawn doe. A grand Tortoiseshell doe was thrown out on account of crooked legs. It is foolish to send such to any show, and after protesting and throwing such out for upwards of ten years we think exhibitors ought to take the hint. Angoras, first a good-woolled Rabbit, second not fit for show pen. Himalayans poor. In the Variety class first was a pretty good Silver-Grey, second a Belgian Hare, and third also a Silver.

POULTRY.—*Game.*—Black Red.—1, R. Hamminway. 2, J. Mason. 3, H. C. and W. J. Mason. Brown Red.—1, W. & H. Adams. 2, E. Aykroyd. 3, W. Milner. Duckwing.—1, E. Aykroyd. 2, J. Mason. 3, H. C. & W. J. Mason. Any other colour.—1 and 2, H. C. & W. J. Mason. 3, H. Beldon. Red.—Cock.—1, W. & H. Adams. 2, H. E. Martin. 3, E. Aykroyd. Any other variety.—Cock.—1, W. & H. Adams. 2, W. & H. Adams. 3, G. Holmes & Deane. Hen.—1, H. E. Martin. 2, E. Aykroyd. 3, W. Ormerod. Any other variety.—Hen.—1, H. C. & W. J. Mason. 2, B. Walker. 3, H. E. Martin. SPANISH.—1, J. Thresh. 2, H. Beldon. 3, J. Powell. COCHINS.—1, S. B. Harris. 2, C. Sidgwick. BRAHMA POUTRES.—Dark.—1, J. F. Smith. 2, C. Holt. 3, W. Schofield. Light.—1, H. Beldon. 2, E. Horfall. 3, S. Lucas. DORKINGS.—1, W. Harvey. 2, J. Newton. 3, J. White. POLANDS.—Cup and 2, H. Beldon. 1, W. Harvey. HAMBURGERS.—Gold-spangled.—1 and 2, H. Beldon. 3, G. Holmes & Deane. Silver-spangled.—1, 2, and 3, H. Beldon. Gold-pencilled.—1, 2, and 3, H. Beldon. Silver-pencilled.—Cup, 2, and 3, H. Beldon. Black.—1, H. Beldon. 2, G. Morris. 3, C. Sidgwick. HOUDANS.—1, W. Whitworth, jun. 2 and 3, M. Hall. FRENCH.

1, W. H. Crabtree. 2 and 3, C. M. Sanders. GAME BANTAMS.—Black Red.—1, A. S. Bagden. 2, G. Noble. 3, F. Steel. Brown Red.—1, J. T. Moody. 2, J. E. Wilson. 3, F. Steel. Any other colour.—1, J. T. Moody. 2 and 3, F. Steel. Cock.—Cup and 2, F. Steel. 3, A. Smith. BANTAMS.—Black.—1, R. H. Ashton. 2 and 3, C. & J. Ellingworth. Any other variety.—1, H. Beldon. 2, T. P. Carver. 3, W. Richardson. ANY OTHER VARIETY.—1, H. Beldon. 2, S. A. Kirk. 3, A. H. Midgley. DUCKS.—Rouen.—1, J. Newton. 2, H. B. Smith. Aylesbury.—1, C. Holt. 2, S. B. Harris. 3, W. Sparrowhawk. Any other variety.—1 and 2, H. B. Smith. 3, H. Yardley. LIVER CLASS.—1, H. Yardley. 2, W. H. Crabtree. 3, J. Powell. GAMES.—1, W. H. Garforth. 2, F. G. S. Rawson. 3, J. Holmes. PIGEONS.—FOURTEEN.—1 and 2, J. Baker. 3, W. Harvey. H. E. Horner. CARRIERS.—Cup, J. Baker. 2, E. Horner. 3 and 4, H. Yardley. BANTS.—1 and 2, E. Horner. 3, J. Baker. H. Yardley. JACOBIANS.—1 and 2, T. Holt. 3, J. Thompson. H. Yardley. DRAGONS.—1, A. McKenzie. 2, J. Baker. 3, F. Seaton. TUMBLERS.—Short-faced.—1 and 2, J. Baker. 3, H. Yardley. H. W. & H. Adams. T. Horner, jun. H. Yardley. Long-faced.—1, J. Carrell. 2, W. Ellis. 3, F. Seaton. FANTAILS.—1, J. Baker. 2, J. F. Lovelidge. 3, H. Yardley. TURBITS.—1, J. Baker. 2, H. Yardley. 3, F. Seaton. H. C. Carrell. TRUMPETERS.—1, J. Baker. 2 and 3, W. Harvey. H. E. Horner. W. Harvey. OWLS.—English.—1, J. Thresh. 2, J. Baker. 3, W. Ward. Foreign.—1 and 2, J. Baker. 3, A. Simpson. MAGPIES.—1 and 2, E. Horner. 3, F. Seaton. ANTWERPS.—Short-faced.—Cock.—Cup and 2, W. F. Entwistle. 3, F. Seaton. 1, E. & J. Seaton. Hen.—1 and 2, W. F. Entwistle. 3, F. Seaton. H. W. Ellis. Long-faced.—Cock.—1, 2, and 3, W. Ellis. H. D. J. Whitely. Hen.—1 and 2, W. Ellis. 3, F. Seaton. Medium-faced.—Cock.—1, W. F. Entwistle. 2, F. Seaton. 3, W. Ellis. Hen.—1 and 2, W. Ellis. 3, W. Ward. SWALLOW.—1 and 2, E. Horner. 3, F. Seaton. ANCHORELLA.—1, J. Todd. 2, H. Yardley. 3, J. Booth. ANY OTHER VARIETY.—1, W. Harvey. 2, H. Yardley. 3, F. Seaton. H. E. Horner. H. Yardley. SELLING CLASS.—Cup, J. Baker. 2, F. Seaton. 3, E. Horner. H. E. Wainwright.

JUDGES.—Poultry: Messrs. Hutton and Martin. Pigeons: Mr. J. Hawley. Rabbits: Mr. E. Hutton.

EPWORTH SHOW OF POULTRY, &c.

THIS was held at Epworth on the 5th inst. in a meadow on the north side of the church. Tents were provided for the poultry, Pigeons, dogs, and cage birds, and altogether the scene was very lively and gay. The pens were of wood with wire fronts, but in some cases they were too small. It has usually been the custom here to advertise the Judges' names, but this year the Committee omitted to do so, the consequence being that the entries were much smaller than usual, although there were still 420 of all except dogs.

Game were first on the list, and were shown singly, the Red class for cocks being an exceeding good one. The winners were Brown Reds, and the first won also the cup for these classes. Single Red Game hens were also good. First a hen of grand shape and colour, second a pullet very stylish; both Brown Reds. In the following class for cocks Duckwings won, the first a grand bird but a little heavy in tail; second not so good in colour, but nice in most points. In hens Duckwings also won. *Spanish* mustered only three entries, but these were good, and the cup for other large varieties was awarded here. In *Brahmas* only the first were noteworthy, but these were very good, except that the ground colour of the hen was a little pale. In *Cochins* the winners were Buffs, and very good and in nice feather. In the Variety class Gold Polish were first and Black Hamburgs second, both capital pens. *Hamburgs* were mixed classes and the entries poor; the Silver-spangles were, however, a good pen. Classes were provided for single cocks and single hens, in which were some good birds. In cocks a Gold Polish was first and *Brahma* second; and in hens a *Dorking* was first and *Spanish* second. *Bantams* were also single birds. The class for Red cocks was very good, but the pens were rather small. First was a grand-styled bird, very close in feather; second a little large, but quite as good in other respects. Highly commended a bird very good in colour, but large and much heavier in feather, several of the good birds being also noticed. Hens were very good. The first a well-moulded bird, good in colour; second a smaller bird, but not so tight in feather nor so clear in colour. In cocks of any other colour the winners were Duckwings, but in hens the winners were Piles, the first one of the best that can be imagined. Cocks Any other variety were first and second Black, the cup being awarded to the first; the second was neat in head, but somewhat squirrel-tailed and short of furnishing. Hens very good and small, also Blacks. In the Selling class Gold Polish were first and *Spanish* second. Broun or Aylesbury *Ducks* were pretty good, but not in the best feather; and in the varieties first were Red-legged Whistlers, and second Carolinas.

In *Pigeons* the entries were good but the classes not numerous, and these were also shown singly, the cup for the best bird going to a good all-round Black Carrier cock, the second and third in that class being also Blacks. In Pouters the first was an extraordinary Blue hen in grand show, second a Red cock, third a Blue hen. Tumblers were all noticed. First a capital all-round Almond cock, second an extraordinary Kite, and third an Almond hen. Excepting the winners the Jacobins were only moderate. Fantails were very good. Turbits a very good lot. First Silvers, second and third Yellows. All spike-headed and very clean-thighed. In Barbs a capital Black hen was first, Black cocks winning the other prizes. Dragons were a good class. First a Blue, most perfect in head; second Silver with black bars; and third a Yellow, exceedingly sound in colour. In the Variety class an exquisite Blue Foreign Owl was first, a Trumpeter second, and Satinette third.

Cage Birds were next. In yellow Canaries there was nothing striking, but one very good Mealy Norwich turned up in the next class. In the following class a Yellow-crested was first and Green second; both good. Goldfinches, though good and well shown, were not equal to what we have seen here, but the Linnets were, as usual, quite up to the mark. In the Variety class first was a Cinnamon and second a Bullfinch.

Two classes were provided for **Rabbits**. In Lops a grand Tortoiseshell buck stood first, the measurement 22½ by 4½; second a Sooty Fawn buck, 22 by 4½; highly commended a Fawn, 22 by 4½, in bad order, and would have been as well in the hutch. Any other breed had sixteen entries. First a moderate Silver-Grey and second a Belgian Hare, another of that variety being highly commended.

POULTRY.—**GAME.**—*Black-breasted or other Reds.*—Cock.—Cup and 1, W. and H. Adams. 2, H. E. Martin. *vhs.* Sales & Bentley. *Hen.*—1 and *vhs.* A. Cameron. 2, E. Aykroyd. **GAME.**—*Any other colour.*—Cock.—1, W. & H. Adams. 2, C. Travis. *vhs.* J. A. & H. H. Staveley. *Hen.*—1, J. A. & H. H. Staveley. 2, Sales & Bentley. *vhs.* A. Cameron. **FRENCH FOWLS.**—1, W. Outlack, jun. **SPANISH.**—Cup and 1, J. Powell. 2, Mrs. Alsopp. **BRAMMAS.**—1, J. T. Smith. 2, W. Harvey. **COCHINS.**—1, S. R. Harris. 2, Mrs. Alsopp. **HAM-BURGERS.**—*Spangled.*—1, Holmes & Destiner. 2, H. J. Wilson. *Penicilled.*—1, J. Smith. 2, G. Ashpole. **ANY OTHER VARIETY.**—1, W. Harvey. 2, J. Kellest (Black Hamburg). *vhs.* J. Chester. **ANY VARIETY EXCEPT GAME.**—Cock.—1, A. & W. H. Silvester (Gold Poland). 2, W. Hesletine (Brahma). *Hen.*—1, W. Harvey. 2, J. Powell. *vhs.* A. & W. H. Silvester (Gold Poland). **GAME BANTAMS.**—*Black-breasted and other Reds.*—Cock.—1 and 2, A. Sugden. *vhs.* J. Nelson. *Hen.*—1, A. S. Sugden. 2, J. Nelson. *Any other colour.*—Cock.—1, J. Nelson. *Hen.*—1, Mrs. E. Newbitt. 2, A. Smith. *vhs.* J. P. Mansell. 2, Dawson. **BARBANS.**—*Any variety except Game.*—Cock.—Cup and 1, R. Ashton. 2, W. H. Shackleton. *Hen.*—1, R. Ashton. 2, A. Smith. 3, W. L. Clark. **SELLING CLASS.**—1, A. & W. H. Silvester (Gold Poland). 2, J. Powell. **DUCKS.**—*Aylesbury or Rouen.*—1, J. White. 2, S. R. Harris. *Any other variety.*—1, A. & W. H. Silvester.

PIGEONS.—**CARRIERS.**—Cup and 1, J. Baker. 2, H. Yardley. **POUTERS.**—1, 2, and *vhs.* J. Baker. 3, L. & W. Watkins. **TUMBLERS.**—1, W. & H. Adams. 2 and *vhs.* J. Baker. 3, H. Yardley. **DOVES.**—1, T. Holt. 2, H. Yardley. **FAIR-TAILS.**—1 and 2, J. P. Lovelidge. 3, H. Yardley. **TURKISH.**—1, J. Baker. 2 and 3, R. Woods. **MAPIES.**—1, J. E. Crofts. 2 and 3, J. Baker. **BARBS.**—1, H. Yardley. 2 and 3, J. Baker. **ANTWERPS.**—1, J. Gardener. 2 and 3, H. Yardley. **DRAGONS.**—1, Hon. W. Sugden. 2 and 3, R. Woods. **ANY OTHER VARIETY.**—1, J. E. Crofts. 2 and 3, W. Harvey. *vhs.* J. Baker. R. Woods. **SELLING CLASS.**—1, J. Baker. 2, J. Baker. 3, H. Yardley.

CAGE BIRDS.—*Canary.*—*Yellow.*—1, W. Perkins. 2, J. Sanderson. *Buff.*—1, W. Perkins. 2, T. Green. *Green or Variegated.*—1 and 2, T. Green. **GOLD-FINCH.**—1, S. Gravill. 2, R. Pearson. **LINNET.—1, T. Kirk. *vhs.* S. Gravel. **ANY OTHER VARIETY.**—1, T. Green. 2, R. Pearson.**

RABBITS.—*Lop-eared.*—*Buck or Doe.*—1, C. King. 2, J. A. Barra. *Any other breed.*—*Buck or Doe.*—1, W. Lumley. 2, W. Allison. *vhs.* J. G. Abland.

JUDGE.—Mr. E. Hutton, Pudsey.

THE CARRIER.

POWER OF WING AND COMPASS.

"I hear a voice you cannot hear
Which bids me not to stay;
I see a hand you cannot see
Which beckons me away."

THERE has been much interesting writing on the powers of the Carrier Pigeon, the length and rapidity of their flights and modes of training, along with speculations as to their guide for their homeward course. The latter points to the theory of this bird flying by sight alone. I find that the Rev. E. S. Dixon in his very interesting work, "The Dovecote and Aviary," takes this same view; and though I always hesitate to place my opinion against that of such men of letters as Mr. Dixon, still on this point (the guide of the Carrier on the wing) I beg most respectfully to differ. It is pretty well known that I am not an Antwerp-Carrier fancier, and do not encourage the Antwerp as a bird that ought to be in the fancy for several reasons which I shall not discuss at present. But Antwerps I keep for two purposes: first, as feeders for my young Pouters, and second for table use. For both these purposes I find them most suitable. First, then, as to the power of wing possessed by this bird. I do not think this point is yet fully developed in this country; but so far as my personal experience goes I shall give it. The plain narrative I think may answer the purpose best. It may be interesting, and I hope will not weary readers.

Several years ago when in Manchester I called on Mr. W. Millward, bird dealer, from whom I had all my Belgian Canaries. He had lately arrived from the Continent, and brought with him a stock of Antwerp Carriers, which he then found to be most unprofitable. Not having before seen such birds, which I could be sure of having been imported, I purchased three pairs. The stock consisted of mostly blues, some meales, and some nameless colours; but all were self-coloured, and all showing a cross of the Owl, a slight division of the feathers on the breast. Some of them had the breast feathers slightly turned, indicating the frill. They were wild as newly-caught Hawks, and strong enough to carry before them a pane of window glass, as one of them did when in my possession. After much care and caution I found them to be hardy birds, breeders almost the year round—indeed, I am never without some few young ones. During the season when early light they take two flights per day, the cocks and unoccupied hens at about 7 A.M., the hens and unoccupied cocks about 1 P.M. The flock invariably fly southward, and are away for about an hour and a half each time. I have seen them fully ten miles south

still holding in that direction. When first noticed on their return they are always at a very great height; but should it be blowing hard (the weather seems of little consequence to them) they often return from the northward, having no doubt been carried to the east or west beyond their home. Three years passed when a friend came on a visit from Ledbury, Herefordshire. This friend saw my Antwerps, and expressed a wish for a pair or two to breed for table use. After his leaving for home I caught three pairs all bred in my loft (Antwerp loft, for with them I have nothing else). They were put into a box (not a basket or cage), and addressed to a mutual friend in Manchester, as they could not reach Ledbury in one day from Glasgow. They reached Manchester in the evening, were rebooked for Ledbury next morning, and reached their destination that evening; but until then were not taken out of the box in which I had placed them. Before sending the birds away I pulled the flight feathers out of the right wing of each bird, and my instructions were, "Keep them confined with such a netting as will let them see the locality, till they have each a nest of young ones, and are sitting upon their second eggs." Those instructions were rigidly adhered to. One night the netting was removed according to instructions, and the birds were at liberty next morning. A man was set to watch. The cocks took sundry short flights, and by-and-by relieved their mates occupied in incubation; the hens came out, and at once took wing. The date I cannot now give precisely—let me call it the 18th of July. On the morning of the 30th I had a letter from my friend dated the day before (the 19th) saying, "the birds were yesterday morning let out, but two of them have not returned. I am afraid they are lost." While in the act of reading my friend's letter my man who attends to those birds came into my office saying, "I think two of Mr. —'s birds are back." Scarcely believing him I went out into the yard, and there certainly were two of the hens I had sent to Ledbury.

Now, I can tell to a mile the distance between Glasgow and Ledbury, Herefordshire, by railway; but I will let our readers measure the distance as the crow flies, and decide whether or not this is a very long flight. Mark first, those birds had never been trained; second, they had never been in the hands of anyone till caught by me when I pulled the flight feathers from one wing of each bird. These birds would leave their cote at Ledbury about 10 or 11 A.M. on the 18th, and as I did not know what day or week they were to be set at liberty, of course I did not expect them, and at all events I certainly did not expect they would at any time return to Glasgow on the wing. For all I know they may have reached on the evening of the 18th or during the day of the 19th. Two months after this I gave a pair to a friend in Paisley—a pair of young ones. They had only been two days outside the loft, and never had left it beyond a hundred yards. They were taken away squeakers, and confined with a netting in front for three weeks. When let out they were at their birthplace in ten or twelve minutes. It is only seven miles to Paisley by road. Those birds had never been flown.—J. H.

ITALIAN VERSUS ENGLISH BEES.

In my former communication on this question I think I have sufficiently proved on abundant and undoubted evidence that the Italian bees have been found superior in almost every respect to the common English or North-European bee, which appears to be the same as that which has hitherto been the honey bee of North America. It has been so proved in Switzerland, Germany, North America, and elsewhere. The only country, so far as I know, in which there exists any serious doubts as to its superiority is Great Britain. It is not that there are wanting in England, and Scotland, and Ireland great admirers of the golden-bellied foreigners, for almost, if not quite, as much has been said in their favour by our own bee-keepers as has been said by those of other nations. Yet it must be admitted that on the whole we have not had the same amount of evidence in their favour, or so convincing in character, as that which has reached us from America and the continent of Europe; and consequently those who are still sceptical on the subject, as for instance our friend Mr. Pettigrew, have considerable ground for their attitude of doubt and distrust. For myself I must acknowledge that I am far from satisfied that the common English bee is not in every way as profitable, though it certainly is not so handsome, as the Italian bee. I have now had them in my apiary, either pure or mixed (hybrid as they are called), for many years, and though I am very partial to them, and find them altogether good and pleasant to work with without any of those voices which have been attributed to them, neither can I say that I have found them endowed with all the magnificent virtues which have been as freely allotted them. Opinions in England widely differ respecting them, nor have we received, so far as I know, any such evidence as that with which Germany and America supply us, which obliges us to acknowledge their superiority in and for those countries. Can it be that our apianians have not really bestowed that attention upon the

Italians which has been so liberally bestowed upon them elsewhere, or is there something in the climate of this country which does not suit them? Mr. Pettigrew, as all know, is more than sceptical as to their superiority over the common English, but simply because no sufficient evidence has come before him to convince him of it, as certainly he knows nothing about them from personal knowledge himself.

It would be highly desirable if we could collect the opinions—or, I should rather say, if we could ascertain the practical knowledge—of bee-keepers throughout the country on this important subject. Mr. Pettigrew has challenged a trial of the respective merits of the two species. Why should this not be accepted? although I doubt the practicability of his particular plan.

Thus far I had written when the last number of the *Journal* was brought in by the postman. There I regret to read what Mr. Pettigrew has allowed himself to write on the subject before us. It is too bad for anyone to speak of people of whom he knows no evil in the contemptuous language indulged in. There are as honourable and as trustworthy persons to be found in America as in England. I for one protest with all the indignation the case deserves against the use of such language, which is as unchristian as it is unjust. No man repented more truly than Dickens of the language used by him in his earlier days, and subsequently he fully retracted it when he came to know our transatlantic cousins better. The *Journal of Horticulture* finds its way to America. Pray let my remonstrance, and your approval of it (editorially) find an equal circulation there with Mr. Pettigrew's unjustifiable expressions. And pray who are the "quack dealers in England" of whom he tells us there were "one or two some ten years ago?" At that time I had some pure Italians from our excellent and lamented friend Mr. Woodbury, who distributed them largely. Is it of him that Mr. Pettigrew speaks? I protest again against the bad taste, to say the least, which prompts such reckless writing. It were sufficient for Mr. Pettigrew to say that he does not know the Italian bee, and that he has never given it a fair trial.

It is this trial I want to know about. Has anybody in the three kingdoms given these bees any such fair trial as has been given to them in America? If not, it is mere prejudice or peevishness which dictates the offensive writing to which I object. Let us have some such trial if it can possibly be had; but for such fair trial we must have more than the feeble experience of bee-keepers who have merely introduced two or three stocks into their apiaries. Pit half a dozen of the one against the same number of the other, and let this be done in several parts of the country, and we shall then know the truth.—B. & W.

I CANNOT pass Mr. Pettigrew's article last week on "Hives and Ligurians" without a word of protest, and regret that that gentleman should publish his opinion that gentlemen who differ with him in apianian experience are "quacks." The introduction of the Ligurian bee in England and the invention of the frame hive is mainly due to the late Mr. Woodbury, who was an honoured contributor to this *Journal* before Mr. Pettigrew became author of a bee book. I, in common with many other readers, always welcomed Mr. Woodbury's articles, and learnt to look upon them as practical and veracious; and although, perhaps, enthusiasm might occasionally have highly coloured some of the good qualities of the new bee, there is no justification for the term "quack." Mr. Pettigrew says he is no inventor and has no hive peculiarly his own, and yet there is a hive known as the Pettigrew. Its size makes it a very good hive for a skep, but this virtue is shared by almost all frame hives, whose other advantages are in my opinion countless. I can thoroughly endorse "B. & W.'s" able exposition of American opinions of Ligurian bees. Mr. Pettigrew has told us he has never kept Ligurian bees, and therefore I consider that he is an incompetent judge in the matter. Abundance of evidence as to their superiority has been published.—JOHN HUNTER, *Eaton Rise, Ealing.*

[We think that Mr. Pettigrew will regret that he wrote, as much we regret that we overlooked, the strong expressions which he used. Let the subject now be banished to the cave of silence.—Eds.]

GERMAN PASTE.—Stale wheaten bread, $\frac{1}{2}$ lb.; pea meal (not pea flour), $\frac{1}{2}$; blanched sweet almonds, 1 oz.; lard, a piece as big as a walnut; and a teaspoonful of honey or treacle. The bread can hardly be too stale, half of which crush into powder, and soak the remaining half in cold water, which squeeze out as much as possible; pound the almonds, and mix all together; dry before a hot fire, but do not bake it, and add a pinch of mawseed.

OUR LETTER BOX.

LIMITED SPACE FOR FOWLS (*Seven-years Subscriber*).—You may choose from Hamburgs (Pencilled or Spangled), Oréve-Cours, Houdans, Game, or Malays. The last-named, if you like their appearance (and many admire

them), are very hardy at all times, and well up to all the duties of a fowl. The Hamburgs are very handsome. The Game are admired by all. You have done wisely in putting the dang heap in the fowl's run. It is very valuable to their health. We advise either Game, Malay, Spangled Hamburg, or Houdan.

ORÉVE-COURS' EGGS SCALY (*A Constant Reader*).—Rub them with mercurial ointment. Give more green food.

SIX IN PIGEONS (*Constant*).—Your Pigeons are either two cocks or two hens, most probably the former, as, had they been of opposite sexes, they would have paired; or, if two hens, and being kept without a possibility of getting a mate, they would very probably have played at pairing, have made a nest, and laid eggs in it, with, of course, no result.

TRIAL OF ITALIAN BEES (*F. J.*).—See what "B. & W." says upon the subject in the current number of the *Journal of Horticulture*. Certainly, if the driven bees remain in the hive into which you have put them, it is certain that their queen is with them. In this case you should give the new queen to the parent hive. We would by all means advise you to wait to force your swarm till the bees begin to hang out. In the event of their swarming before you drive them the Italian queen should still be given to the parent hive, only in this case you must be prepared for a second swarm in due time, with which she may go off.

METEOROLOGICAL OBSERVATIONS.

CANNON SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1896.	Barom. at 9 A.M. at Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.				
May.		Dry.	Wet.			Max.	Min.	In sun.	On grass.			
		Inches.	deg.			deg.	deg.	deg.	deg.	deg.	In.	
We. 3	30.387	46.3	41.0	N.W.	46.5	59.0	56.1	111.5	80.3	—		
Th. 4	30.422	46.9	43.5	E.	46.6	59.7	56.5	104.4	82.4	—		
Fri. 5	30.381	46.5	45.0	S.E.	47.1	60.8	54.5	108.7	87.5	—		
Sat. 6	30.352	55.1	47.5	N.	47.5	62.5	54.5	112.3	89.6	—		
Sun. 7	30.314	50.5	47.8	N.	46.3	60.1	41.5	107.4	87.5	—		
Mo. 8	30.419	51.3	48.5	N.E.	46.7	59.3	57.9	100.8	83.5	—		
Tu. 9	30.517	50.5	46.0	N.	46.9	59.5	56.9	107.3	85.4	—		
Means	30.393	50.4	45.5		47.7	61.0	56.3	107.9	81.7	—		

REMARKS.

- 3rd.—A very fine day, but still rather cold.
4th.—Beautiful day throughout, but wind easterly and cold.
5th.—Rather hazy early, but a very fine day and night.
6th.—A very fine day; rather storm-like in early afternoon, but very fine after, and a splendid night.
7th.—Cloudy till noon, but very fine all the remainder of the day and night.
8th.—Fine morning, a very fine bright day, but with a cold north-east wind.
9th.—Another very bright fine day, but still the cold wind prevailing prevents the warmth we expect at this season.
A dry rainless week, high barometer, and north-easterly wind. Frost on grass on four nights.—G. J. SYMONS.

COVENT GARDEN MARKET.—MAY 10.

LARGE importations of vegetables are now arriving from France, as are also Apples and Cherries, the last-named being very inferior as yet. A fair demand has been experienced for Strawberries, but the supply of Grapes is far in excess of the demand, fully double the usual quantity being sent from the Channel Islands. Peaches and green Gooseberries have made their appearance.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	dozen	0	0	0	Malberries.....	lb.	0	8	0
Apricots.....	dozen	0	0	0	Nectarines.....	dozen	0	0	0
Cherries.....	lb.	0	0	0	Oranges.....	per 100	6	0	12
Chestnuts.....	bushel	0	0	0	Peaches.....	dozen	0	0	0
Currants.....	sieve	0	0	0	Pears, kitchen.....	dozen	0	0	0
Black.....	do.	0	0	0	dessert.....	dozen	0	0	12
Figs.....	dozen	0	0	0	Pine Apples.....	lb.	1	6	4
Filberts.....	lb.	0	0	0	Pistons.....	sieve	0	0	0
Gobs.....	lb.	0	0	1	Quinces.....	bushel	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	6	0	18	Strawberries.....	oz.	0	2	1
Lemons.....	per 100	6	0	12	Walnuts.....	bushel	4	0	19
Melons.....	each	0	0	0	ditto.....	per 100	1	8	2

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	0	0	0	Leeks.....	bunch	0	4	0
Asparagus.....	per 100	2	0	10	Mushrooms.....	potato	1	0	0
French.....	bundle	6	0	17	Mustard & Cress.....	pennet	0	0	0
Beans, Kidney.....	per 100	1	0	2	Onions.....	bushel	3	0	0
Beet, Red.....	dozen	1	6	0	pickling.....	quart	0	0	0
Broccoli.....	bundle	0	9	1	Parley.....	doz. bunches	2	0	0
Brussels Sprouts.....	sieve	0	0	0	Parsnips.....	dozen	0	0	0
Cabbages.....	dozen	1	0	0	Peas.....	quart	4	0	0
Carrots.....	bunch	0	4	0	Potatoes.....	bushel	2	0	0
Cauliflowers.....	per 100	1	6	0	Kidney.....	do.	2	0	0
Celery.....	dozen	1	0	4	New.....	lb.	0	6	1
Celeryworts.....	doz. bunches	2	0	4	Radiishes.....	doz. bunches	1	0	1
Cucumbers.....	each	0	4	1	Rhubarb.....	bundle	0	6	1
Endive.....	dozen	0	4	1	Salsify.....	bundle	0	0	0
Fennel.....	bunch	0	8	0	Scorzonera.....	bundle	1	0	0
Garlic.....	lb.	0	6	0	Seakale.....	basket	1	6	2
Herbs.....	bunch	0	8	0	Shallots.....	lb.	0	2	0
Horseradish.....	bundle	4	0	0	Spinach.....	bushel	4	0	0
Lettuce.....	dozen	6	0	1	Tomatoes.....	dozen	0	0	0
French Cabbage.....	dozen	1	6	2	Turnips.....	bunch	0	4	0
					Vegetable Marrows.....	do.	0	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MAY 18-24, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	m.		
18	Tu	Royal Hort. Soc. of Ireland Second Spring Show.	66.3	49.2	54.3	4	5	7	47	3	0	1	19	24	8	47	189
19	F	Crystal Palace Show. Royal Botanic Society—Lecture [at 4 P.M.	67.0	42.7	54.9	4	4	7	49	3	10	2	88	25	8	44	140
20	S		66.9	48.4	55.3	4	2	7	50	2	23	4	0	26	8	41	141
21	SUN	ROGATION SUNDAY.	66.8	47.4	55.5	4	1	7	53	2	35	5	27	27	8	37	142
22	M	Royal Geographical Society (Anniversary) at 1 P.M.	65.4	42.4	53.9	4	0	7	58	3	51	6	59	28	8	33	143
23	Tu	Messrs. Jackson's Clematis Exhibition closes.	67.8	43.5	55.5	3	59	7	54	3	15	8	38	29	8	28	144
24	W	Royal Botanic Society First Summer Exhibition.	67.4	43.0	55.3	3	58	7	55	3	50	9	58	1	8	28	145

From observations taken near London during forty-three years, the average day temperature of the week is 66.6°; and its night temperature 49.2°.

STOPPING AND TYING VINE SHOOTS.



UST now, when so many Vines are growing rapidly, the stopping and tying of the young growths require considerable attention. Stopping the shoots is most important. There is nothing more injurious to the prosperity of Vines than allowing the growths to ramble and form dense masses of foliage before they are removed. Skilled Grape-growers seldom or never allow their Vines to make more wood than is actually

necessary; but amateurs, who, as a rule, are afraid to remove or restrict young shoots, err greatly in permitting these shoots to become too long before stopping them, and the consequence is that the wood is neither thick nor short-jointed, but small and pithy; besides, when the shoots run to a great length and are suddenly cut back the whole Vine receives a severe check which would never have been felt if the small points had been constantly pinched-out at the proper length of the shoot.

Stopping should begin when the shoots are, at the very most, a foot long; on many of them the bunches are quite visible at that length, and there should not be the slightest hesitation in nipping the point out with the finger and thumb at one leaf beyond the bunch. At this time the wood may be very small and the point leaves scarcely visible, but that does not matter. If the Vines are in ordinary health and vigour the shoots when stopped like this thicken in a remarkably short time, and strong short-jointed wood is secured where it is most needed.

In the course of a week or ten days the Vines should be gone over again: at this time it will be seen that many lateral shoots are pushing from the axils of the leaves, especially towards the point of the shoot. The whole of these should be stopped at one leaf from the main shoot, and not one of them should be allowed to proceed an inch further throughout the whole season. Subsequent growths to the one last removed should not be allowed to make more than two leaves before they are taken off. Sometimes when a shoot has failed to start from the old rod there is a vacancy in the leafage of the Vine; in cases of this kind the next lower shoot may be allowed to grow a few joints longer to fill up the gap, but it should be rigidly restricted like the others as soon as this is accomplished.

Where the Vines are young and the principal rod does not reach the top of the house there is always a length of young leading wood requiring careful attention. In many instances this shoot is considered a very precious article and allowed the free run of the house. Its length is more conveniently counted by yards than feet, and in the autumn it is generally found that the greater part of the wood is badly ripened or quite green; but such is rarely the case with leading shoots which are stopped at or near to where they will form the extension to the main rod at pruning time. From 3 to 5 feet is a good addition

yearly until the top of the house is reached, and if the leading shoot is stopped at either of these lengths, according to the strength of the Vine, it will be found much more serviceable the following season than one six times its length. When it has been stopped once the next top shoot formed may be allowed to go a few feet further. Up to the first stop will always remain the thickest and best in every way, and this part will ripen when the point is quite green.

As there are always shoots which either do not produce bunches or that have to be cut off to moderate the crop, a word may just be said about them. Very probably the spurs with no fruit this season will be the most prolific next year. Plump well-developed buds or eyes are of more use close to the spur than the other end of the shoot. The closer the shoot is restricted the better do the back buds swell, and the nearer these fruitless shoots are kept to a consistent length the greater is their chances of doing well at a future time. One foot is quite long enough for them. They do not at this length take up much space, and they are sure to perfect the wood thoroughly.

Young Vines growing in pots either for planting or fruiting are frequently allowed to grow to the length of 8 and 10 feet before they are stopped. When they come to be used the half of this wood is cut away. Those raised from eyes in the spring are generally thickest at the far end, so that the very best of the wood is lost. When the Vines are stopped at the length they are desired for planting or fruiting, which is from 3 to 6 feet, they make much superior canes to the long straggling Vines. For early-fruiting pot Vines there is a great advantage in keeping them short, as they perfect their growth early and do not take so long to ripen the wood. As in the case of long leading shoots on planted-out Vines, long canes in pots often do not ripen their wood to the extreme point. This is more particularly the case with Muscats, and if the sap continues to flow, as long as there is green wood and leaves at the top, it must be extremely injurious to cut these unripe points off, as is often done when the cane looks brown far enough up for the purpose for which it is required.

The mistake which occurs oftenest in connection with tying Vine shoots is in delaying this operation too long. It is not uncommon to see the young shoots breaking their points against the roof; and having grown so long in this erect direction, when they come to be tied down many of them snap off at their connection with the old wood, and others of them with their point bent down break in two halfway. All this may be avoided by looking over the Vines frequently from the time the first shoots are 6 inches long until the last of them have been fixed in their proper places. Pinching and tying may be done at one and the same time. Strong thick shoots should only be slightly inclined at the first tying; next time they will yield freely to the wires without any danger of breaking. Leading shoots should not be allowed to twine amongst the wires. Soft strong matting is a good material for tying with. Shoots bearing fruit should be

made very secure. When the tile falls before the bunch is out the wood often breaks and the fruit is lost.—J. MUIR.

THE AURICULA IN YORKSHIRE.—No. 1.

ONE of the greatest pleasures that falls to the lot of an Auricula grower is that of being able to compare notes with a brother fancier. Hours of keen enjoyment pass unheeded, and the interest grows as time flies. I visited Yorkshire on the 2nd of May, when the bloom was in perfection. At that time the flowers in the more favourable climate of Essex had passed their best, although many fine trusses of the late sorts were in good condition.

At Kirkby Malzeard, near Ripon, I received a most cordial reception from the Rev. F. Horner, and had the pleasure of inspecting his floral gems. Of course it is impossible to visit any collection when all the flowers are at their best; the earliest had become faded, and some few of the very latest were not yet in. It was, I think, in the autumn of 1874 that Mr. Horner wrote a series of most excellent articles in this Journal, and at that time he very fully described the best flowers. A canny Scotsman writing to me in reference to the articles said that "better described they could not be;" but, he added with characteristic caution, "I do not quite agree with him in all he says." Of course it was not to be expected that he would; every grower has particular flowers that he grows better than others, and the sorts that succeed best at Kirkby would not be the best at Slough, and the favourite flowers in Scotland would not be those most esteemed with us in Essex. However, there are some flowers always good alike, and to begin, let us take Freedom (Booth). What trusses Mr. Horner had of this! A celebrated grower, writing of it in 1857, says, "Where number of pips is not regarded this is the best green edge, the green being the most deep and pure, and the contrast between that and the black velvety body colour being so perfect;" but this grower had never but once seen seven pips on a truss. Mr. Horner's plant had nine, and such pips! each of them large enough to cover half-a-crown. Anna (Traill) may well take the second place. It much resembles Freedom, has the same paste and body colour; perhaps more rounded. Prince of Greens (Traill) is a grand flower, and has the best edge of all, but its pale tube, which bleaches before the flower is at its best, is a sad defect. Col. Taylor (Lee) was very fine, one pip on a small plant being perfect in form and up to the mark in all the points. Page's Champion was rather past its best; the green of the edge is not surpassed by that of any other, but the flowers were just a little crumpled; the body colour is a very attractive violet, and withal it is a fine exhibition flower which no collection should be without if it can be obtained. Emperor (Littin) was not up to the mark either north or south; it is an inconstant flower. I once saw it grand in Mr. Dombain's collection. Lady Ann Wilbraham (Oliver) had larger pips than I had seen of it, and Lady Blucher (Olegg) had a very pure green edge.

In grey-edged flowers there are, as has been previously noted, many of the best Auriculas, and the highest on the list this year, taking constancy into account, is Lancashire Hero (Lancashire). I have had it very fine, and Mr. Horner's plants were quite constant. Many of the pips of George Lightbody (Headly) have been set this year, and the trusses have been badly formed; it sometimes comes better than Lancashire Hero. Richard Headly (Lightbody) was also opening badly. Beauty (Traill) was the most effective truss amongst the greys. It may not be quite so refined as some, but it is a useful stage flower. Dr. Horner was not quite so good as it has been; it had the appearance of a large pip of George Lightbody, but not quite so smooth in outline. Complete (Sykes) was in wonderful health. It is usually of weakly growth, but as grown at Kirkby it is fit for any exhibition. The body colour is black and the petal beautifully rounded.

Mr. Horner's collection is very strong in white-edged flowers—indeed I may say that I never saw Smiling Beauty (Heap) until I saw it here. The edge was very pure, pips large and flat; it worthily heads the list. John Simonite was better last year than it has been this season; the pips were very large. Ann Smith (Smith) was the purest white of any; the petals are pointed, which is its greatest fault. Earl Grosvenor (Lee) is rather a late flower, and some half dozen trusses of it were grand; it has been very fine indeed. There were also a few singularly beautiful pips of True Briton (Hepworth). Glory (Taylor) has not been quite up to its usual good quality, the edge has been irregular. Miss Arkley (McDonald) was very

neat, and makes a good truss. It has a fair white edge. Others in my note-book are Bright Venus (Lee), and Ashworth's Regular.

Passing to selfs, Kay's Topsy was very fine amongst the dark flowers; and of Marquis of Lorne (Campbell) there were some admirable trusses. This is a crimson self, and worthy of Campbell. William Lightbody is a crimson maroon, similar in colour to Campbell's Lord Clyde. It opens out quite flat, and has a more rounded paste and petal than Lord Clyde. Marquis of Lorne, another crimson self of Campbell's, was not out. Charles J. Perry (Turner) was also fine in its class, but the greater proportion of the selfs were over. In all, Mr. Horner grows about six hundred plants of named flowers. Very interesting also was the collection of seedlings, of which I calculated there were about two thousand plants.

The vagaries of the Auricula from seed are, as Mr. Horner said, amusing in their absurdity. Charles Edward Brown has given many yellow selfs; it has evidently been crossed with Gorton's Stadtholder; they have nearly all thin watery paste like that variety. Next we have a few pots containing self flowers, very dark, large, and fringed like Sims' Vulcan—so like, that they might be mistaken for that sort. They must certainly be raised from it. Not at all. Look at the label; it reads—Regular (Ashworth), a small white edge. Here is yet another pot with crimson selfs with mealy foliage like Lord Lorne, but that is not the parent; they have been raised from Charles E. Brown. Highland Laddie (Pollite) gives large goggle-eyed dark selfs. The fine white edge of Smiling Beauty has thrown crimson and dark selfs. Lord Lorne has given a repetition of itself, a fine crimson but with a more circular paste than its parent, and as the paste may become denser it will be a fine variety. Raising seedling Auriculas is a most interesting occupation, and will, if followed out, yield a large revenue of pure enjoyment.

Polyanthuses were at their best, and a very fine lot of plants were staged in the greenhouse. Cheshire Favourite was the best flower. This and Lord Lincoln have very dark lacings; Kingfisher was the best of the crimson-laced flowers. The centre and edge of a Polyanthus should be the same colour, if they are different it is a fault.

The Tulips at Kirkby are, notwithstanding the cold nights, looking very well. The thermometer registered 8° of frost on the 2nd of May, but the beds were of course covered with canvas. It will be a fine sight to see the two beds in flower comprising about one thousand plants.

The Carnations and Picotees are grown in beds, and they are evidently tended by careful hands, as the plants are quite clean, and with a few exceptions are in excellent health.

The Ranunculus also finds a home in the vicarage garden. I did not observe any labels to the rows, and on remarking this to Mr. Horner he said that he knew them all when they flowered. So with the Auriculas, Tulips, and Carnations, they can all be distinguished and named if the labels should be lost. As Robert Southey, a late poet laureate, said of his books, so the florist can truly say of his flowers—

"My never-failing friends are they
With whom I converse night and day."

There are many other objects of interest in this famous garden, amongst them a collection of the different species of Primula, comprising Primula intermedia with pale purple flowers, and a large number of the diminutive alpine species. I also noticed a variety of P. acaulis with very large double crimson flowers.—J. DOUGLAS.

MARGOTTIN'S NEW ROSE TRIOMPHE DE FRANCE, H.P.

I was anxious to see the first blooms of this gold-medal novelty, to which the French Judges have given so proud a title, and I held our friend Mr. Camm's view that it was to be a grandly improved Marquise de Castellane. I was, however, much surprised, not to say a little disappointed, to find when the first three blooms opened on the original plants from the raiser that it was a highly-coloured Colonel de Rougemont, nearly 5 inches over, having a full composite or rosette-like centre, but withal keeping a circular outline, presenting a very showy mass of light crimson or bright rosy carmine petals arranged in the form of an improved Baron Prevost, or more correctly Colonel de Rougemont. I think this fine and distinct Rose might have been well named Rougemont le Grand. It has a sweet scent of the Baron Prevost type, with short

erect robust growth; and probably no Rose for a bed without pegging will make so grand a show of colour as this large free-blooming Perpetual.—H. CURTIS, *Devon Rosery, Torquay*.

SOIL FOR VINE BORDERS.

WHEN I referred to this subject on page 302 my object was to show the unsubstantial nature of much soil included in the (indefinite) definition, light turfy loam, also to point out the error which is commonly made of placing soil in the borders in an "icy cold" state. I was particular to deprecate the opposite error of storing the soil when heated to dryness, and was careful to urge that it should only be placed in a border when in a healthily moist state. To the substance of my remarks "VINE-GROWER" has on page 341 taken considerable objection, and in doing so has imparted useful and suggestive information.

"VINE-GROWER's" remarks on fermentation taking place in the soil after storing are interesting, and he adduces an example of its action in raising the temperature of a Vine border. This is possibly an exceptional case, but on that no one can positively determine; for although "VINE-GROWER" adduces figures he uses the words "at or about," leaving readers to guess what they like, and giving them a justification for supposing that the temperatures were not carefully recorded. That, however, is not of supreme importance so long as the Vines flourished (which doubtless they did) satisfactorily. The soil when stored "at or about" 35° might have been 40°, and that is many degrees above "icy cold." I should not object to place soil in Vine borders at a temperature of 40°, but I do object to the use of it for Vine-border-making when saturated with snow and rain in winter, and when the surface of the ground is at or near the freezing point, and that is a practice which I know has been adopted, and I know also with bad results.

A "VINE-GROWER" has "never known any mishap occur to Vines through deficient bottom heat," but that is not conclusive evidence that mistakes have not been made in making borders with soil at and near the freezing point, and that losses have arisen in consequence. Had I not been practically acquainted with more than one instance of this nature I should not have deemed the matter worthy of public notice.

I know a gentleman who erected vineries solely with the object of deriving a profit on his outlay by the sale of Grapes. The border of one house was made in October when the soil was "at or about 35°"—it was probably 40°: the border of the other house was made at the end of January. The turf for the borders was pared from the same site, but the surface of that taken in January was crisped with frost during some mornings. It was also very wet, and the whole of it was within a few degrees of the freezing point when placed in the border. These borders were both planted on the same day with Vines from the same grower, and the same treatment was given the two houses. How sound that treatment has been the splendid condition of the Vines, especially in one house, attest. Now as evidence of the pernicious effect of using "icy cold" soil, not £1 was realised from the house of which the border was made in January until more than £50 had been derived from the sale of Grapes from the other house where the border was made in October. The soil of these borders, I repeat, was precisely the same, and both houses had precisely the same attention in heating, ventilating, &c. The different results were clearly attributable to the different temperatures of the soil at the time of making the borders. The Vines in the cold border started badly and grew weakly; the others started freely and grew vigorously. In fact a season was lost by burying the cold; and further, the Vines which were planted in the January-made border have never been in such a satisfactory state as those in the October-made border.

The owner of these Vines, who is an excellent and successful grower of Grapes, impresses on all (and they are many) who solicit his advice on Vine-growing, never to pare the icy-cold surface off the ground in winter and bury it in that state 3 feet deep in Vine borders. He considers that he has bought that knowledge at a cost of £50, and is firmly convinced of its soundness. So am I.

The soil in that case was not heated by the fermentation of the vegetable matter in it, neither was the soil of the border which was made in October overheated by the same natural process. Overheating might, however, take place by storing during the hot months of summer, and on that matter "VINE-

GROWER" has communicated a seasonable hint. His remarks also on the evil effects of the overdryness of the soil are unexceptionable. Probably neither "VINE-GROWER" nor myself would in our practice make any serious mistakes in making a Vine border; but with some amateurs the case is different, and it is well that both sides of the question be seen and studied.—A NORTHERN GARDENER.

AURICULAS.

If Mr. Camm feels "a lame dog" at Auriculas, I am sure other friendly hands than mine will also gladly "help him over the stile" of his difficulty.

I once reported incidentally in these pages that I had tried a few of the commoner green and grey-edged Auriculas in the open border. They did not die, and did not bloom well. They had no protection from weather, and they made small hard weather-beaten plants. However, they were not tried a second time, for compassionate friends, thinking they looked poor outcasts, begged them out of their misery. If Mr. Camm is not an old nurse with Auriculas, and has only a few, I would not recommend him to trust edged flowers out in the borders. As he has bell-glasses he had better pot the plants and keep the glasses over them in bad weather, or even always; they can be set on three pieces of wood, say 2 inches high, on which the pot rim can rest to admit a circulation of air. The pots should be kept off the ground on slips of wood, and the plants all summer in a north aspect. He might plunge the pots in ashes and have tile laths placed parallel so as to hold a line of bell-glasses over the plants; but in an open border it would not be easy to keep too much wet from about them without a total covering.

Edged Auriculas are not meant for outdoor work, for the simple reason that a drop of rain upon a flower ruins it.

With respect to Col. Champeys, he is a most rampant grower and could bloom twice five pips with ease, though whether he could give them to stand real florist scrutiny I doubt. A friend of mine was going to show a Champeys two years ago, but it was so very big that it could not be placed in his box.

As to what would be considered a fine truss for exhibition I can only say, Just so many pips of sterling quality as you can get fit upon a truss. Show at the National, and you will find that you have a fine truss if you can get six or seven to stand the test of the best judging.

I am glad of this occasion to refute what seems to be a dandelion-rooted notion southward about us northern florists—that we pull our Auricula trusses to pieces, lowering the blooms to the minimum allowed.

I beg to say that we are not so flat as to knock our Auriculas on the head in that way. If we had a dozen correct and even blooms on a plant, that plant would carry the twelve. Trust me that at the National Auricula Show we crowd all canvases in the race. Our plants are not under bare poles—not under needlessly thinned trusses. Even in the classes where three pips will qualify for competition, twice that number are left—if worth leaving. It all turns on that—if worth leaving. If not, they spoil the good; they are dead weight in the race. Are we to blame in this, whose object is expressly to keep the flower to its high standard of beauty and excellence, and to raise that more and more? Every point in a florist flower is so much beauty added to that flower.

There are principles in all properties, and no such roughnesses as mere size and quantity, which in this connection may be termed the brute force in flowers, should outweigh the higher power of quality and refinement.—F. D. HOBBS, *Kirkby Malzeard, Ripon*.

COMPARATIVE HARDINESS OF SPRING BEDDING PERENNIALS.

Our spring beds in exposed gardens have been severely tried by the last two winters, and annuals are very late in blooming. With a view to the future, I hope some one of your readers will send a more complete list than I can subjoin of the most useful plants for spring purposes, classified as below.

1. *Extremely Hardy*.—*Arabis alba*, *Alyssum saxatile*, *Aubrietia*, *Daisy*, *Polyanthus*, *Primrose*, and *Sempervivum californicum*.
2. *Hardy*.—*Iberis*, *Myosotis*, dwarf *Phloxes*, *Silene*, variegated *Daisy*, hybrid *Violas*, *Wallflowers*, and *Violets*.

3. *Requiring 'a North-east Screen.*—*Cheiranthus alpinus*, Golden Thyme, Pansy, and Stocks.

I fear that Golden Feather must be placed in the third class, though the snow has saved it this season, which spoiled Ajuga. Which class do variegated Cress and dwarf Veronica glauca belong to?

All annuals such as Saponaria, Nemophila, &c., belong to the third class, unless I except Limnanthes.

Bulbs have to be considered with respect to saving the flower from winds, as well as with respect to hardiness, and these I must leave unnoticed.—O. S. B.

BITS ABOUT BELGIUM.—No. 1.

A VISIT to see the Great International Exhibition at Brussels and nothing more was well worthy of the journey; but few visitors let that suffice, and sundry horticultural pilgrimages were made to points of interest in or near to Brussels, Ghent, or Antwerp.

Of the Exhibition much has been said, but neither time nor space permitted a critique on the arrangement of the plants "for effect"—an effect for which "M. l'architecte Fuchs" was awarded a special grand gold medal.

There is no doubt whatever but that the Exhibition was effective, but there is a very grave doubt that a gold medal would have been awarded to Mr. Barron had he created the same effect with the same plants in the gardens of the Royal Horticultural Society of England. That sentence contains two suggestions—first, that the arrangements of the plants were not startling by any novel treatment, as conveying an idea of exalted taste; and secondly, that the Belgian authorities are more liberal in bestowing medals than are horticultural councils in England. Let us take the first suggestion of "taste," passing on to "medals."

In the arrangements of the plants at Brussels it was not difficult to perceive errors of taste. The disposition of the plants was not a triumph of decorative art, and it may be stated unhesitatingly that there were at least two Englishmen in the Exhibition who could, if they had an army of obedient helpers, have achieved a better effect. Given to Messrs. Wills and Barron the same plants and appliances, and no doubt need be entertained as to the result—indeed of two results: That they would have created a better effect in England, and would not have obtained a gold medal between them.

But we must not be hypercritical. If there were faulty associations of plants, the building was so crowded that it was not easy to re-arrange the whole of the collections. Undoubtedly the most superior example of taste in arrangement was displayed in the splendid group of the Messrs. Veitch, and this was done by Englishmen. As was remarked by many competent judges, this collection was faultless. If the same taste that was there exemplified had prevailed throughout the Show the effect would have been infinitely greater than that which was produced.

As a rule, and speaking generally, the plants with green foliage, as Palms, were grouped in one part of the building; plants with ornamental foliage—Aroids, Marantas, &c., in another part; and massive flowering plants, Azaleas, Rhododendrons, and Roses, in a third part. True, there were some exceptions to this rule. Some small Azaleas were associated with Ferns, strings of Spiræas encircled groups of Roses, and Lilies of the Valley fringed the fine-foliage plants; yet nevertheless the great mass of Palms were grouped together, the highest at the back, and ditto may be said in reference to the Azaleas, Roses, and Rhododendrons. These were arranged according to the same stereotyped rule—Mass them together, the highest plants at the back, the lowest in front.

But that was not the worst of it. There is not so much room for taking objection to the formal grouping as to the incongruous juxtaposition of the most prominent collections of flowering plants. The marvellous Azaleas were overpowering—overpowering the Rhododendrons on one side and making even them look dingy, and on the other the really great consignment of Roses from Messrs. W. Paul & Son looked small by the side of M. Ghellinck de Walle's gorgeous masses of Azaleas. As to the Orchids and plants from Holloway and from the establishments of Mr. Bull, Mr. Wills, and Mr. Linden nothing could overpower them; but the Roses especially were placed at a great disadvantage.

The brightness and glitter of one part of the Show was tiring, while the unrelieved greenery of another part was tame. Had the Roses especially, and a few of the Azaleas, been made

to enliven the sombre corners of the structure, and had some of the fine specimens which were hidden in the background been brought boldly forward, the effect would have been infinitely more imposing. The winding promenades were certainly picturesque, and some points highly artistic; but the fact remains that not a single vista of grandeur was to be found in the Exhibition. The grouping for effect may have conveyed an idea upon which English decorators may improve when an opportunity is afforded them, but by no means can it be regarded as a finished example for them to copy if they wish to win a medal in England.

So much for taste, and now to the medals. These honours were provided with unparalleled liberality. They were offered for nearly all sorts of plants and products, and for all classes of horticulturists save one. Is the omission a studied omission, or is it an oversight? It is not surprising to find the same omission in England, a land chary of honours to the living, liberal towards the dead, but in advanced horticultural Belgium the blank becomes noticeable. There was no medal for the actual hybridisers and raisers of new and important plants, the working bees of the horticultural hive. Surely a man who by original conceptions and delicate and successful manipulations creates, as it were, new plants which enrich their owners and unfold new beauties to an admiring world—surely such a man should have some tangible recognition of his skill and some official reward for his achievement.

Changing the theme for a moment to "a bit about England," who will say that such men as Mr. Dominy and others who have wrought so successfully in raising new plants in the renowned establishment of Messrs. Veitch, and Mr. Bause in that of Mr. Wills—who will say that such men are not deserving of some public token of appreciation, some medal embodying their work and recognising its importance? Would it be misplaced honour also to concede a memento to those explorers who "carry their lives in their hands" into tropical jungles and enrich the world by their discoveries? Let those who send the men and receive the plants have all the honour to which their enterprise entitles them; but let not the actual workers, abroad as discoverers, and at home as originators of new and valuable plants, be altogether ignored. The honour awarded to one would not detract from the other. If any valid and substantial objections can be established against rewarding acknowledged merits of this nature let them be forthcoming, for at present no such objections are generally appreciated. That the omission is not one of mere sentiment was admitted last year by Mr. Wills, who generously made over the gold medal awarded to him by the Royal Horticultural Society for his Dracænas to the actual raiser of them, Mr. Bause. The owner of the plants felt that the skill of the raiser was ignored, and he made the sacrifice of relinquishing the medal. It does not seem meet and right that men of exceptional skill should be altogether dependant on private generosity when societies are established to stimulate horticultural progress, to acknowledge enterprise and merit, and reward success. Such men as those alluded to (and there are many others equally worthy of reward), the real workers, the very bone and sinew of horticulture, and by whose hands and heads the science is so practically supported, are "left out in the cold" in England, and they were "left out in the cold" at Brussels.

The subject is one requiring consideration. It was suggested, or rather "brought to a head," by the omission referred to; hence its claim to be included under the heading of this communication. The subject has occupied so much space that some descriptive notes of plants and places must be postponed to future "bits."—J. W.

VIOLETS.

MR. LEE is perfectly correct in stating that I have no red spider. I grow my Violets on a north aspect to avoid it. Violets like moisture, coolness, and shade, yet withal as much air as a mountain Daisy. It is of no use, of course, to expect Violets in winter from plants on a north border. Those who have not frames to spare may take up the plants with balls in late September, and plant them in the full sun in the most sheltered position at command in front of a south wall, watering well if the autumn be dry, and flowers will be forthcoming in such a position when they are not from plants on a north border, and especially if protection be given, as that of mats over hoops, in severe weather. I do not, however, care about Violets outdoors until March or April to follow those in frames, but I may say

that I have gathered many bunches of these sweet flowers from plants on a north border in October, November, and even December. A north border enables me to plant my small pits with plants in early autumn entirely free from red spider, which was not the case when they were grown in the open, and to put plants in frames with their leaves smothered with red spider is simply to protect the spider and kill the plants. I feel extremely obliged to Mr. Lee for particulars of his mode of culture, but which I am sorry to say from altered conditions of climate does not answer in my case. In the open they take red spider. I want the plants free, and grow where the heat is less, hence I plant in a north border.

I will endeavour to make Mr. Lee understand why I do not practise layering runners. The fact is, I did not know of such a practice until Mr. Lee wrote me telling how to raise a stock of Victoria Regina. I had been in the habit of planting rooted runners for some years, but had no idea of pegging them to facilitate their rooting. Now I have tried Mr. Lee's plan, and have found it succeed excellently; but when I penned the few lines on Violets (page 292) I did not consider that I had any right to "plough with another's heifer," considering Mr. Lee entitled to keep if he saw fit a practice of so much advantage to him as a raiser of new varieties of Violet. I thank him for the advice given me, and also for making his practice public.

Propagating from "runners" as practised by Mr. Lee is a system for the million. For outdoor culture I make no objection to its giving the best plants. I know the Parisians pot the runners in autumn several in a 5 or 6-inch pot in little else than "muck" and leaf soil, and with such material produce forced plants which astonish the natives. "They do these things better in France!" Perhaps; but I do not like runners nor plants had from them. They have single stems and well-developed crowns. I have the Neapolitan Violet with at least fifty such crowns in a 6-inch pot. What I want are plants at the close of April, or at latest early in May, that have never produced a flower and have at that time a distinct crown and fair portion of roots. From the side of the plants beneath the soil arise very sparingly plants of this description, which I term suckers, and they are very short in root-stem, whereas runners have the joints distantly placed, and do not produce suckers nearly so freely as those raised from suckers—for like, in this as in other things, succeeds like, and from the lessened length of their root-stem have much more compact roots, lifting with the perfection of balls, and unless the plants have these they might as well go to the dunghill as be planted in frames.—G. ASBURY.

COVENT GARDEN MARKET.

In our twenty-third volume we published a very full history of Covent Garden Market, with a ground plan of it as at present existing and a view of it as it was in 1745, and in vol. xxix. we submitted an illustration of the new covered side market.

We have just returned from a stroll through the Market. Our visit was in early morning—"market morning"—for to see the most striking characters of this great mart we must be "up with the lark and the sun."

Covent Garden just before sunrise is one of the "sights" of London. The amount of the commodities there being offered for sale and distributed, and the bustling activity of the distributors, from the well-to-do tradesman with his van to the humbler coster, conveys an excellent idea of the magnitude of metropolitan requirements and the habits of life of a considerable section of its people.

Covent Garden is not only crowded before sunrise, but all the converging and contiguous streets for a long distance from its centre afford supplementary space, for the market, large as it is, is quite inadequate for its purpose and business. Besides the market proper, it is not too much to say that miles of streets surrounding it are crowded with garden products. Bow Street, Long Acre, and other main thoroughfares are mainly occupied by vans belonging to the greengrocers in different parts of the city. Between these vans and the market an army of porters are engaged conveying in immense loads the vegetable produce which is to "feed the multitude" for the next day or two. The loads which these men carry in the huge baskets would fill an ordinary-sized donkey cart, and their weight must be great—sufficient, indeed, to crush down stronger men not accustomed to be thus laden. The baskets rest on pads, and the pads on the heads and shoulders of the men, the thin end of the pad (2 or 3 inches) being placed on his head, the thick end (nearly a foot) resting on the shoulders,

thus bringing the basket nearly level. Probably by no other means could the human frame support a load so heavy.

In the market square and outside the building, as well as in the streets immediately adjacent, are the vendors' vans loaded high with their merchandise. Cabbages, Broccolis, Turnips, Carrots, Rhubarb, &c., are piled as true as if guided by the rule and plumb-line. These commence arriving soon after midnight, and at early dawn the work of selling and buying begins. From that time until eight or nine o'clock, or about four hours, the amount of business done is enormous; yet, considering the numbers of people engaged—the bustling, cramping, and crowding—it is done in a remarkably quiet manner. There is little or no wrangling and attempts to drive hard bargains, time is too precious for that. Buyers and sellers know at a glance the current value of the goods, and this knowledge expedites business. Chaff and banter prevail, but it is a sort of running fire. Every pause is a loss of time and money. Occasionally, or perhaps frequently, trade is conducted in slang phraseology. A purchaser takes stock of a load of Cabbages. "Price, guv'nor?" he asks. "Three bob and a tanner. Quick's the word," is the prompt reply. That is, 3s. 6d. per dozen for new Cabbages. A man mounts a stack of Rhubarb, and answers inquiries. "Yes, sir; 'ere you ar'; half a dollar. Go ahead." That is, 2s. 6d. per dozen huge bunches. A masculine-looking dame with the "crater" stamped on her visage informs her customers that she has "fine 'Musharoons' 'ninners' this mornin'." That is, Mushrooms 9d. per basket. And so trade is done. Bees in a Clover field are not more busy than are the *habitués* of Covent Garden in early morning.

In the flower market the same activity prevails. Plants are offered in thousands, and are greedily bought and transferred by carts and barrows to brighten and to cheer the balconies and windows of the "great city." "A bit of country" is dear to the Londoner, and if he cannot go to the country the country is brought to him in the fresh sweet flowers. The plants are admirably grown—each is at the zenith of its beauty, sturdy, clean, and vigorous. Nowhere can better examples of culture be found than in Covent Garden of such plants (which are now in season) as Pelargoniums, Fuchsias, Sweet Briars, Cinerarias, Calceolarias, Bouvardias, Rhodanthes, Spiraeas, Callas, Stocks, Musks, Heliotropes, Ferns, and especially Hydrangeas. Plants of the latter in 5-inch pots have heads from 12 to 18 inches in diameter, and exuberant foliage down to the pots. The flowers are mostly pink, a few of them having a tinge of blue. The plants are sold at 12s. to 15s. per dozen: the other plants enumerated being sold at from 5s. to 10s. per dozen.

Boxes of small plants are also offered by hundreds, containing Golden Feather, Lobelias, Pansies, Perillas, Mimuluses, Verbenas, Daisies; also climbing plants in pots of Tropæolums, Passifloras, Convolvuluses, &c. There is an enormous trade in cut flowers. Hardy garden flowers of every conceivable kind are offered in large bunches or bundles. Wallflowers, Lilacs, Forget-me-nots, Primroses, Cowslips, and wild Hyacinths are sold at 9d. to 1s. per dozen bunches; Poets' Narcissus, very beautiful, at 2s. 6d. to 4s. per dozen bunches; and Lily of the Valley at 1s. per bunch. Most of these are also made up in mixture by women in sizes and at prices to suit each customer; they can work, as they say, "to any sort o' money."

The central avenue is about 50 yards in length and perhaps 4 yards in width—much too short and too narrow. It contains seven shops on each side, and in them are to be seen probably the finest vegetables, fruit, and cut flowers which this and other countries can produce. The fruit is the most attractive. Messrs. Webber have a fine display, consisting of splendid Pines from St. Michael's; Peaches, Apricots, and Cherries from France; and excellent Grapes, Melons, and Strawberries from England. The latter were exceedingly fine and were selling freely, the best selected at 24s. per basket. We also noticed in other shops splendid French Asparagus at 7s. 6d. per hundred heads; Cucumbers 1s. each, and the best samples of all other vegetables in season. Nuts are also offered in all sorts, including Chinese Litchies, &c. Bouquets are always attractive, but early morning is not the best time to see them simply because the best are not then to be seen. Purchasers are too aristocratic for early rising. Favourite flowers for bouquets are white Camellias, Gardenias, Roses, Stephanotis, and Bouvardias. These are grouped thinly so that each shows its individual beauty. Occasionally a slight—very slight—touch of scarlet and pink is introduced, but high colours are used sparingly, and the flatness is broken by delicate sprays

of Orchids, and in some Spiræas and Lilies. Maidenhair Fern is the favourite green.

Such is the result of our morning's stroll. A similar stroll to any gardener would not only be interesting but instructive. Covent Garden teaches many lessons, and its products are calculated to make those who think much of themselves feel rather "small." There is this, however, to be remembered, that the examples are not the ordinary products or even the best samples of one garden, but the cream of hundreds of gardens, and to expect any single gardener to equal these productions is tantamount to expecting a single artist to equal the various styles of painting in the Royal Academy or National Gallery. We recommend all gardeners who have the opportunity to take a stroll through this great mart from five to seven o'clock on "market morning."

ROYAL AQUARIUM FLOWER SHOW.

MAY 16TH.

THE classes in this the second Exhibition of the season were not so numerous as those of the preceding Show, but the prizes were provided on the same scale of liberality which mark the exhibitions of the Summer and Winter Garden Company. The classes in the schedule numbered twenty-four only, but in these the substantial sum of nearly £300 was offered, and there can be no doubt but that the policy of providing a limited number of classes with good prizes is preferable to a large number of classes with small prizes.

The Exhibition was a very good one, and the collections were admirably arranged—in a word, there was plenty to see and room to examine and enjoy the floral feast. The Roses were magnificent; stove and greenhouse (including new) plants, also Orchids, very good; Tricolor Pelargoniums remarkably fine, and hardy flowers highly attractive.

The Roses have the first claim to notice, and our able friend "D. Deal," the first right to notice them. "This is," he says, "without doubt the finest exhibition of pot Roses ever seen in London. It was not simply a 'battle of the giants,' but never have amateurs come out in such force. I thought that the collection of pot Roses shown by Mr. Moorman at the Alexandra Palace was the best I had ever seen exhibited, but they were excelled to-day, and it is an instance of what liberal encouragement does that plants so superior should have been brought forward. The out blooms were also excellent, and in every direction the Rose exerted its pre-eminence, the whole Show being radiant with its blossoms and fragrant with its perfumes."

"The grand contest of the Exhibition was that for twelve pot Roses (open). It lay between Mr. O. Turner and Mr. George Paul, and was decided in the order named. It was indeed a very hand-to-hand fight, and well worthy of the renowned champions who took part in it. Mr. Turner's plants were Madame T. Levet, Duke of Edinburgh, Madame de St. Joseph, Madame V. Verdier, Paul Ferras, Maréchal Vaillant, Beauty of Waltham, Celine Forestier, V. Verdier, Juno, Anna Alexieff, and Edouard Morren. Of these the most noticeable plants were Celine Forestier remarkable for its colour, and Paul Ferras. This plant has a history as showing the great vitality of these large plants when well cared for. It was purchased ten years ago from the Messrs. Lane, who had exhibited it for ten years, so that it has been serving the purposes of exhibition for twenty years, and yet is strong and vigorous. Messrs. Paul & Son of the Old Nurseries, Cheshunt, took the second prize with Madame T. Levet, Princess Mary of Cambridge, Madame Victor Verdier, Charles Lawson, Souvenir d'un Ami, Anna Alexieff, Victor Verdier, Juno, Celine Forestier, Camille Bernhardt, Marie Baumann, and Horace Vernet. Of these Princess Mary of Cambridge was remarkably fine, while probably the greatest feat in pot-Rose culture was the production of two such plants as Marie Baumann and Horace Vernet, varieties which everyone knows to be miffy, and yet here they were in splendid foliage and order. Many plants in this class were 6 feet high and 5 feet through. Mr. Ellis, gardener to J. Galsworthy, Esq., Coombe Leigh, Kingston, was placed third.

"In the class for twenty Roses, Messrs. Paul & Son were first with Cheshunt Hybrid (very good), M. Vaillant, Lyonnaise, Edouard Morren, Princess Beatrice, Victor Verdier, Perfection de Monplaisir (beautiful yellow Tea), Dupuy-Jamin, Caroline Kuster, Celine Forestier, Charles Lefebvre, La France, Paul Verdier, Madame Lacharme, Madame V. Verdier, Marquise de Montmartre, Beauty of Waltham, &c. Mr. Turner was second with Edouard Morren, Souvenir de la Malmaison, Thomas Methven, Souvenir d'un Ami, Madame Lacharme (lovely), Perfection de Monplaisir, Paul Neron, Celine Forestier, Princess Beatrice, Royal Standard, Paul Verdier, Antoine Mouton, John Stuart Mill, the Rev. J. B. M. Camm, Madame Marie Finger, &c. The most noticeable point in this collection was the position taken by Mr. Turner's own English-raised Roses: Royal Standard, John Stuart Mill, and the Rev. J. B. M. Camm were simply grand, while the exquisite fragrance of the

latter fully sustained its character as the sweetest Rose in growth. Messrs. Lane & Son were third with a nice collection—Madame Charles Wood, V. Verdier, Marquise de Castellane, Madame V. Verdier, Elie Morel, John Hopper, and Madame Marie Finger. An extra prize was awarded to the Misses Christy (gardeners, Mr. Moorman), for a very creditable collection, amongst which was a fine plant of Capitaine Christy.

"In the amateurs' classes for six Roses in pots the first prize was awarded to J. Galsworthy, Esq., Coombe Leigh, Kingston Holt (Mr. Ellis, gardener), for a very excellent collection, consisting of Anna Alexieff, La France, Victor Verdier, Souvenir d'un Ami, Général Jacqueminot, and Celine Forestier. They were large, not leggy, and excellently bloomed. The second prize went to the Misses Christy, Combe Bank (gardeners, Mr. Moorman), for the following—Centifolia rosea, Edouard Morren, Charles Lawson, Paul Verdier, Victor Verdier, and Beauty of Waltham. The Paul Verdier in this collection was an excellent example of pot culture. In the class for twelve blooms (amateurs), Mr. Galsworthy was first with an excellent box containing amongst others Camille Bernhardt, Madame Willermoz, Edouard Morren, Pierre Notting, Eugénie Verdier, Beauty of Waltham, Cheshunt Hybrid, and La France. The Misses Christy second with a good collection, amongst which Marquise de Castellane, Etienne Levet, Madame Willermoz, Paul Verdier, and La France were good.

"In the class for twenty-four out blooms (open), Messrs. Paul and Son, Cheshunt, were first with Alice Dureau, Celine Forestier, Maréchal Niel, Camille Bernhardt, Marie Van Houtte, Madame Willermoz, Madame V. Verdier, Souvenir d'Elise, Duke of Edinburgh, Princess Mary of Cambridge, Gloire de Dijon, Marie Baumann, Anna Olivier, and Horace Vernet. Mr. Turner was second with John Stuart Mill, Comtesse de Serenyi, Mad. V. Verdier, Royal Standard, Mrs. Baker, Charles Lawson, Marie Guilhot, M. Niel, and Capitaine Christy; and the Misses Christy third.

"We now pass to the Auriculas. It is no easy matter to show these on the 16th of May, and had it not been for this vile north-easter I question much if any had been in bloom. There were three exhibitors, Mr. Turner being first with Sarah (self), Richard Headly, Duke of Argyll (self), Lancashire Hero, and Gertrude Knight. The Rev. H. H. Dombain was second with George Lightbody, Smiling Beauty, Lancashire Hero, Alderman O. Brown, Richard Headly, and Lovely Anna. Mr. James was third. Alpines were also shown by Mr. Turner, Mr. Dean, and Mr. James." Thus has "D. Deal," written on Roses and Auriculas, and now to the plants.

In Class 6, for twelve Clematis, distinct (open), £8, £5, and £3 were offered. Messrs. G. Jackman & Son, Woking, were the only exhibitors. They staged good plants in the best varieties. Prominent was the fine double blue Countess of Lovelace, having as a companion the double white Duchess of Edinburgh. Wm. Kennet is one of the finest amongst dark single flowers, Princess of Wales being lighter (lavender), and, almost white, lanuginosa candida. These with Albert Victor, Fair Rosamond, Stella, Mrs. Hope, and others formed a splendid group, than which few in the hall were more effective.

In Class 7 for nine greenhouse Azaleas in pots not exceeding 16 inches in diameter, £8, £4, and £2 were offered. Mr. Ratty, gardener to R. Thornton, Esq., The Hoe, Sydenham Hill, had the first place for good specimens—umbrella-shaped plants, with short stems; Messrs. W. Outbush & Son, Highbury, being second with medium-sized standard plants. In Class 8, for six plants (amateurs), £8, £3, and £2 were provided. Mr. Wheeler, gardener to Sir F. Goldsmid, was first with oval-shaped specimens; Mr. Ratty being second; Mr. Smith, gardener to A. Cooper, Esq., 2, Park Road, Twickenham, being third with pyramids 3 feet high. In Class 9, for six standard plants (open), the prizes were £5, £3, and £2. Mr. Turner, Slough, was a long way ahead, with plants on 2-foot stems, having heads 3 to 4 feet in diameter. These were not like the Belgian plants, but they showed green amongst the flowers, which is by many considered an improvement. Reine des Fleurs, a charming variety, was very fine, and equal to it was Madame Cannart d'Hamale; Duchesse A. de Nassau and Cedo Nulli being also effective. Mr. Ratty, gardener to R. Thornton, Esq., Sydenham Hill, was placed second; and W. Outbush & Son, Highbury, third, for smaller yet attractive plants on foot stems, having heads 15 inches in diameter. In Class 10, for twelve Calceolarias, distinct (open), Mr. James, gardener to W. F. Watson, Esq., Redlee, Isleworth, was the only exhibitor, and worthily had the first prize. These plants were splendid, being about 15 inches in height and the same in diameter, the flowers being of large size, and the foliage half covering the pots. James's brand was stamped on every one of them.

In Class 11, for eighteen hardy perennials in flower in pots not exceeding 12 inches in diameter, Mr. R. Parker, Tooting, had the first place with a remarkably fine group including Carex argentea, Anemone sylvestris, Aubrietia Hendersonii, Phlox Nelsoni, Trollius asiaticus, Spiraea palmata, a fine pot of Orchis foliosa, Peonies, Irises, &c.; Mr. Roberts, gardener to W. Terry,

Esq., Peterborough House, Fulham, being second with plants potted from the border. In this group *Narcissus poetarum* was very beautiful, and *Saxifraga granulata plena* (pure white) was also effective. The third prize was awarded to Mr. Elliott, gardener to L. Clark, Esq., Sydenham Hill. An extra prize was awarded to Mr. R. Dean for a very chaste group.

In Class 13, for eight Gold and Silver Tricolor *Palargonium*, distinct (nurserymen), prizes of £10, £6, and £4 were provided. Mr. H. Coppin, The Rose Nurseries, Shirley, Croydon, was first with perhaps the finest plants ever exhibited. The plants were mostly flat-trained and were 2 to 3 feet across, the foliage being in perfect health and colour. The largest plant was *Madame Patti* [Mrs. Rousby]; the best formed plant—a semi-globe—*Mrs. Laing*. These with *Italia Unita* and Mr. John Clutton being Silvers; the Golds being *Pinkaroh*, Mrs. Turner, Sir B. Napier, and Countess Tyrocnal. Mr. Meadmore, Brompton, being second with compact highly-coloured plants; Mr. Mould, Pewsey, Wilts, being third for smaller plants, and Mr. Burley, Brentwood, commended.

In the corresponding amateurs' class for six plants the prizes were £6, £4, and £2. The first place was secured by Mr. North, gardener to H. J. Hill, Esq., Ockwells, Brentwood, who had semi-globular plants 18 inches in diameter, *Carter's Prince of Wales* being the best of the Golds, and Countess Tasker of the Silvers. Mr. J. Hinnell, gardener to T. A. Davis, Esq., Anglesea House, Norbiton, being second with not formally trained but healthy well-coloured plants. Mr. Watson, gardener to T. H. Bryant, Esq., Glencairn, Surbiton Hill, third.

In Class 14, for twelve plants suitable for dinner-table decoration, in pots not exceeding 6 inches in diameter (open), £6, £4, and £3 were offered. Mr. Bull won first honours with very neat and bright plants 18 inches high, comprising *Oroton spirale* and *O. majesticum*, *Aralia elegantissima* and *A. leptophylla*, *Cocos Weddelliana*, *Raphia flabelliformis*, *Thrinax argentea*, *Dracaena Cooperi* and *amabilis*, *Pandanus Veitchii*, and *Cyperus alternifolius variegatus*. Messrs. W. Rollisson & Sons had the second place with rather smaller plants of nearly the same sorts; the third prize going to Mr. Wright, Florist, Lee, Kent; and an extra prize being awarded to Mr. T. Lambert, gardener to H. W. Segelcke, Esq., Harne Hill. In Class 15, for twelve new and rare plants (open), £12, £8, and £5 were provided. Mr. Bull secured the first honours with a formidable collection, every plant of which was in the full gloss of perfect health. At the back were the two grand Palms *Pritchardia grandis* and *Kentia Moorei*, fine examples of *Encephalartos Vroomi*, and *Oroton majesticum*; the front circle containing *Dracaena Goldieana*, *Oroton spirale*, and *Adiantum gracillimum*, a fine trio; also *Pandanus Veitchii*, *Oroton volutum*, *Phyllostenium Lideni*, *Dracaena Shepherdii*, and *Paullinia thalictroides*. Mr. B. S. Williams having the second place also with a very fine group, *Zamia australis*, *Pandanus Veitchii*, and *Adiantum gracillimum* being especially noticeable. *Aracaria Goldieana*, a fine Australian introduction, imparted a distinct feature to this group, which also contained a good example of *Kentia Moorei*. The third prize was awarded to Messrs. Rollisson for smaller but good plants. In Class 16, for six plants (excluding *Orobolids*) never before exhibited in Europe, the prizes were £9, £6, and £4. Mr. Bull staged *Dracaena nivalis*, a green-and-white variety, very good; *Dieffenbachia illustris*, dark green with creamy blotches; *Eucharis candida*, *Eranthemum tricolor*, bronzy foliage marbled with red and green; *Katokidzamia Hopel*, and *Pandanus princeps*, and secured the first prize.

In Class 17, for six *Dracaenas* (amateurs), £6, £4, and £3 were provided. Mr. Legg, gardener to S. Balli, Esq., Cleveland House, Clapham Park, had the first prize for a splendid group, comprising *D. Shepherdii*, 6 feet in height; *Fraserii*, exceedingly fine; *Weismannii*, *Baptisti*, *Mooreana*, and *Youngii*. No plants could exhibit better evidence of superior cultivation than these. Mr. Strahan, gardener to P. Crowley, Esq., Waddon House, Croydon, being placed second. In the corresponding nurserymen's class for twelve *Dracaenas* the prizes were £12, £8, and £6. Mr. Bull had first honours with a superior collection in excellent health and colour. It comprised *D. Goldieana*, *Rex*, *ferrea variegata*, *imperialis*, *triumphans*, *elegantissima*, *amabilis*, *magnifica*, *exoalis*, and the sorts named in Mr. Legg's collection; Mr. B. S. Williams being placed second for large plants, and Messrs. Rollisson & Son third for bright, fresh, smaller specimens. An extra prize was awarded to Mr. Wright, nurseryman, Lee, Kent, who staged in his collection a fine example of *D. Shepherdii*.

In Class 19, for twelve stove and greenhouse Ferns (open), in pots not exceeding 10 inches in diameter, £8, £5, and £3 were offered. Mr. B. S. Williams was in usual place—first. His plants were not large but distinct, including *Polystichum lepidocaulon*, *Woodwardia radicans cristata*, *Lomaria cyasoides*, *Platyocentrum grande*, &c. Mr. W. Smith, gardener to A. Cooper, Esq., Park Road, Twickenham, was second, and Mr. Wheeler third for smaller plants.

In Class 23, for six *Orobolids* (amateurs), the prizes were £5, £3, and £2. Mr. Ward, gardener to F. G. Wilkins, Esq., was first

with *Odontoglossum Phalaenopsis*, very fine; *Oncidium serratum*, *Vanda tricolor*, *Lycaste Skinneri*, *Odontoglossum Pescatorei*, and *Cypripedium villosum*, all very good. Mr. James, gardener to W. F. Watson, Esq., Redless, Isleworth, was second with *Cattleya Mossii*, a splendid specimen, with upwards of thirty flowers; *Cypripedium barbatum grandiflorum*, very fine; *Odontoglossum Pescatorei*, *Oncidium cucullatum*, *Vanda tricolor*, and *Oncidium ampliatum major*. Mr. Wheeler, gardener to Sir F. Goldsmid, had the third prize. The prizes being of the same value in the nurserymen's class for the same number of plants, Mr. B. S. Williams having the premier place with *Vanda suavis*, seven spikes; *Oncidium sphacelatum*, eight fine spikes; *Odontoglossum Pescatorei*, the same plants that were exhibited at Brussels; *Cypripedium barbatum*, with forty flowers; *Saccolabium ampullaceum*, and *Anguloa Clowesiana*. Messrs. Rollisson & Son were second, their collection including a good pot of *Cypripedium niveum* and the beautiful *Dendrobium Falconeri*.

For twelve bunches of hardy cut flowers the first prize was won by Mr. R. Parker, Tooting. The flowers were arranged in 6-inch pots of wet sand, the flowers being surrounded by foliage. They composed *Adysetum orientale*, *Scilla nutans violacea* and *S. nutans roses*, *Aponogeton distachyon*, *Orchis foliosa*, and *Irises* being the most attractive pots in this charming group. The second prize was awarded to Mr. Roberts, gardener to W. Terry, Esq., Peterborough House, Fulham. Mr. Dean, Ealing, also exhibited.

Valuable miscellaneous groups were staged, and extra prizes were awarded to the following exhibitors:—Messrs. W. Outbush and Son, The Nurseries, Highgate, for *Azaleas*; Messrs. Osborn and Sons, for Palms and ornamental plants; Mr. T. Pestrledge, Boston Park Road Nursery, Brentford, for Tricolor *Palargoniums*; Messrs. W. Rollisson & Sons, The Nurseries, Tooting, for a valuable mixed collection; Mr. G. Toms, gardener to H. T. Westenhall, Esq., The Poplars, Seven Sisters Road, N., for stove and greenhouse plants; Mr. J. Ward, gardener to F. G. Wilkins, Esq., Leyton, for ditto, very good; Mr. B. S. Williams, The Nurseries, Upper Holloway, for a large and excellent mixed collection; Messrs. H. Lane & Son, The Nurseries, Great Barkhamstead, for a group of *Azalea mollis*; Messrs. Paul & Son, Old Nurseries, Okehampton, and Messrs. W. Paul & Son, Paul's Nurseries, Waltham Cross, for *Roses*; Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, for excellent *Pansies* in seventy varieties; and Mr. Earley, Valentines, Ilford, collection of *Apples* and *Pears*.

First-class certificates were given to Mr. Bull for new Palms, *Pritchardia grandis* and *Kentia Moorei*; for *Dracaena Goldieana*, *D. Rex*, *D. triumphans*, and *Katokidzamia Hopel*, a fine *Oycad*; to Mr. Turner for *Azalea Flambeau*, rich crimson scarlet, and *Jean Vervane*, salmon-flaked rose and white edge, fine; also for *Roses Rev. J. B. M. Camm*, J. Stuart Mill, and *Jean Ducher*. To Mr. B. S. Williams for *Aralia elegantissima* and *Aracaria Goldieana*, a distinct kind and highly ornamental by its pendulous branchlets; to Messrs. W. Rollisson & Sons for *Trichomanes Barcroftii*, one of the most charming of Filmy Ferns; to Messrs. Osborn & Sons for *Pyrethrum aureum laciniatum*, highly distinct and novel; to Mr. Dean for *Primula cortusoides grandiflora maxima*, a fine and large form of *P. c. amena*; and to Messrs. Jackson for their splendid double *Clematis Countess of Lovelace* and *C. Princess of Wales*.

ROYAL HORTICULTURAL SOCIETY.

MAY 17TH.

FRUIT COMMITTEE.—Henry Webb, Esq., in the chair. Messrs. Harrison & Son of Leicester sent specimens of *Annie Elizabeth Apple*, which was certificated two years ago. A seedling Apple was sent by Mr. Bland, Fordham near Soham, which was in very good condition at this season. It is a medium-sized fruit, somewhat conical, and was very acid in flavour. A brace of Cucumbers was sent by Mr. John Porter, Freshfield, Liverpool, which was recognised as *Telegraph*. Mr. F. Bates, gardener to G. Moore, Esq., Appleby Hall, Atherton, sent a brace of Cucumbers called *Appleby Favourite*. It was considered coarse and not equal to others in cultivation. Mr. James Batters, gardener to Mrs. Willis Fleming, Chilworth Manor, Romsey, sent four varieties of vegetables grown in 9-inch pots on the shelves of a cool house. They were much admired, and a cultural commendation was unanimously awarded. The kinds were Potatoes, Peas, Vegetable Marrow, and Broad Beans. Mr. J. Ollerhead, gardener to Sir H. Peek, Wimbledon House, sent a splendid bunch of fruit of *Musa Cavendishii* weighing 97 lbs. A cultural commendation was unanimously awarded. Mr. Sage of Ashridge Park Gardens exhibited the bine and fruit of Cucumbers affected with the gangrene which attacks the plant. Mr. Horley of Toddington, Beds, sent plants of a very beautifully variegated Broccoli. The blade of the leaf is a pure white, and the edge is dark green about half an inch wide. The Committee thought it very ornamental, and unanimously awarded it a first-class certificate as a decorative plant.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. Messrs. Veitch & Sons exhibited what cannot be described as less than a magnificent collection of Orchids. For cleanliness and health of the plants, and for the splendid condition of their flowers, these plants were alike remarkable. *Odontoglossum niveum* had twenty-seven fine spikes of lovely-spotted flowers; *Aërides Fieldingi* had five spikes, 15 to 18 inches in length; *Odontoglossum prismatocarpum* was represented by an admirable variety. The *Cattleyas* were gorgeous. They comprised *C. Mossii*, *C. Mossii Dawsoni*, in grand form; *C. Mendelli*, a variety of surpassing beauty; *C. Warneri*, and the pure white-and-yellow *C. Wagneri*. *Lelia Wolstenholmsii* had two vigorous spikes and thirteen handsome flowers. *Dendrobiums* were represented by *D. Bensonii* in admirable form, the spike having twenty flowers; and equally fine was *D. thrysiflorum*. *Oncidiums* comprised *O. Marshalli*, a noble spike of thirty flowers; and *O. concolor*, beautiful canary yellow. Of *Cypripediums* a pan of the chaste *C. niveum* contained twenty-four flowers. *C. Dayanum* was fine alike in foliage and blooms, and *C. Dominii* towered aloft in its distinctness. Of *Masdevallias* were *M. Lindenii* and *M. Veitchiana*, both extremely rich. Noticeable also were *Vanda Parishii* and *Anguloa Ruckerii*, but perhaps most of all attractive were the grand examples of *Odontoglossum vexillarium*. The blooms of these were nearly 8 inches across, of stout texture and charming colour. A variety with a pure white lip, delicately-tinted sepals and petals, and yellow centre is undoubtedly a gem of the purest water—an acquisition to be cherished by its owners and to be coveted by all growers of Orchids. In the exhibition of this rich collection Messrs. Veitch have almost surpassed themselves, for a group so perfect and complete is rarely to be seen at any exhibition.

Messrs. Veitch also exhibited plants of *Boronia elatior*, which will prove a fine companion plant to *B. megastigma*. *B. elatior* is of slender growth, and is profusely covered with pale carmine flowers sweetly scented; it received a first-class certificate. First-class certificates were also awarded to the same firm for *Aralia Veitchii* (unanimously), a plant infinitely smaller in all its parts than *A. Veitchii*, the leaves, indeed, being almost thread-like by their slenderness; for *Azalea indica Jean Vervaene*, a rosy-tinted scarlet-flaked flower with a white edge breaking into the body colours; for *Cattleya Mendelli*; and for *Cypripedium selligum*, a fine cross between *C. barbatum* and *C. laevigatum*. A gold medal was awarded for *Odontoglossum niveum*, and a Davis medal was recommended to be given for the excellence of the collection.

Sir Trevor Lawrence, Bart., M.P., exhibited a group of five Orchids of great merit. A plant of *Aërides Mendelli* was awarded a first-class certificate. It is a very beautiful variety after the style of *A. Larpentae*, but with buff sepals, the labellum being blue and white. It is very sweetly scented. A cultural commendation was also attached to the plant, it being in superb health and bearing five fine spikes. The same exhibitor also submitted *Masdevallia Harryana violacea*, a vigorous plant with fourteen fine flowers; *Odontoglossum crispum*, *Promenaea citrina*, and *Dendrobium carniferum*. A vote of thanks was awarded for these plants.

Messrs. E. G. Henderson & Son, Wellington Road Nursery, St. John's Wood, exhibited double *Cinerarias* *Prince Imperial*, purple, and King *Alphonso*, magenta. For the latter a first-class certificate was awarded. These are perfectly double, and will be useful and lasting decorative plants, also valuable for affording cut flowers. The same firm also exhibited a remarkable collection of forty *Mimulus*. The plants were in 2½-inch pots. Some of the flowers were more than 8 inches in diameter, and in a great variety of gorgeous colours. This is the finest strain of *Mimulus* we have ever seen, and for cool moist places no plants can produce so rich an effect as these. They were highly commended by the Committee.

Mr. C. Noble, Sunningdale Nursery, Bagshot, exhibited *Clematis lanuginosa violacea*, and received a first-class certificate. It is a splendid variety, the flowers being 8 inches in diameter, the petals very stout and of a purplish blue colour. This belonging to the hardy section of *Clematises* cannot fail to become highly useful.

Sir G. Macleay, Bart., Pendell Court, Bletchingley, exhibited two remarkable native fronds of *Neottopteris australasica*, these fronds being 6 feet 7 inches in length and 7 inches in width, and no doubt were larger when perfectly fresh. A vote of thanks was awarded. Mr. Green, The Botanical Nursery, Holmesdale Road, exhibited a basket of *Iris pumila lutescens elegans*, and Mr. Boothby, Louth, Lincolnshire, a double seedling *Polyanthus*.

WATERING STRAWBERRIES.—"A MARKET GARDENER" writes, "Unless the weather changes and showers fall, it will be necessary to apply liquid manure to the Strawberry beds, or the trusses will be weak, flowers small, and fruit inferior." He states that "by the long continuance of the cold and drying easterly wind the plants are throwing up their trusses stubbornly, and other crops are nearly at a standstill." Cauli-

flowers, he further adds, show appearances of "buttoning," owing to the check received by ungenial weather.

LOUIS VAN HOUTTE.

A GIANT in horticulture is gone—Van Houtte is dead. On the 30th ult. we held converse with him at the Brussels Show, and on the 8th inst. we shared the hospitalities of his table in his home at Ghent, regretting his sinking frame, but admiring his energetic horticultural spirit, and enjoying his sparkling wit over the social meal. We know somewhat of the habits of this remarkable man, having sojourned with him in response to the following invitation:—"Come and see me. You dine with us, you sleep with us; you go into my nursery and into my house when you like; you have all you want; you stay as long as you like;" and then with definite earnestness—"you stay a month." That is an example of the heartiness of the welcome which he gave to strangers—a specimen of the hospitality for which he was proverbial. Of that visit which occurred three years ago the following was written:—"M. Van Houtte is a gentleman of robust physique and vigorous intellect, and subjected to his penetrating vision a nervous man might feel himself the subject of stock-taking and being read all through. He has not much time for polished ceremony or to press courtesy to an unpleasant extreme. Like many another eminent man he is a great listener, and seems content for his friends around him to do the conventional talk, himself sitting and speaking only to the point. His characteristic is soon seen to be matter-of-fact exactitude, which is one of the greatest acquisitions any man can inherit or acquire, and which in the end will serve him the best. Van Houtte's is a house of work. Each one has his or her duties in conducting this great business. Even the daughters of the household—of charming manners and genial—have their share in foreign correspondence, their maternal parent being chief cashier. Van Houtte spends his whole time in his business bureau. He has not been all round his nursery for three years, yet is cognisant of everything in every part of it. From five to eight every morning is occupied in arrangements with different foremen, and if it is never seen, still the governing head is felt in every corner of the establishment. Surrounded by a large staff of clerks every detail of management is arranged in the bureau, the chief himself commencing work between one and two o'clock every morning, and working incessantly until 8 p.m. with less than one hour's intermission, and this not at any particular season, but constantly from one year's end to another. What a lesson it teaches, that there is no royal road to success, and is one more example that those who have won have worked—worked with rare zeal and perseverance irresistible in pressing to the goal of success. That is a brief sketch of his character and position then, but now he is dead.

This excellent man and highly skilled horticulturist died at his residence in Gendbrugge-lex-Gand on the 9th inst. He was nearly sixty-six, being born at Ypres in the June of 1810. The mere enumeration of the offices and honours conferred upon him are a sufficient testimony to his great merits. He was Director of the Royal Botanic Gardens, Brussels; Director and Founder of the Horticultural School at Gendbrugge; Administrative Member of the Royal Agricultural and Botanical Society of Ghent; Member of the Royal Botanic Society of Belgium, and of a great number other horticultural and scientific societies, &c.; Mayor of Gendbrugge; Knight of the Royal Order of Leopold of Belgium; of the Imperial Order of Saint Anne of Russia; of the Royal Order of Portugal; of the Imperial Order of the Rose of Brazil; Commander of the Spanish Order of Charles III., &c. At the recommendation of M. Alexandre Verschaffelt M. Van Houtte settled at Ghent in 1839, and he commenced the publication of the "*Flore des Serres*" in 1845, and continued without any interval its editor as well as proprietor until the time of his death.

He was the son of a military engineer who was engaged on the fortifications of Antwerp, and dying when his son was young the training of the latter was confided to his mother, but, as is very usual, had an inclination for studies very different from those of his father. He was devoted to floriculture, and being a good botanist was engaged as a botanical traveller to search for new plants worthy of cultivation in South America, the coast of Central Africa, and elsewhere. He was subsequently Curator of the Royal Botanic Gardens of Brussels, and afterwards joined an Englishman with a view of establishing a business in Britain. To this enterprise he was too confiding, entrusting his capital to his colleague with the result

as expressed in his own (M. Van Houtte's) words—"I have not seen that man or that money ever since." In continuation of the narrative of his life and business he further remarked—"I came back to Belgium to start clear. I had little money but plenty of health. I bought the little plot of ground where you saw my porter's lodge. That was all I had thirty-five years ago, and now you have seen my place. It has all been done by hard work. But," continued the man who had so much respect for his assistants, "I did not make it all myself; my men did it, my good men. I have foremen on my place who have been here twenty to thirty years. My plan has been this: mark it—When I have a good man I keep him, I do not part with him for any money. When I have a bad man I will not keep him if he will pay me, for a good man makes other men good; a bad man makes other men bad." Those are true words worthy of being reproduced. In them is embodied a policy which has proved to be a sound policy and successful, and which in the third part of a century has resulted in one of the most extensive businesses in the world. In the conduct of that business—"this," once said M. Van Houtte, "is my plan: I do the best I can for my friends abroad, and the best I can for my friends at home and my men in my nursery, and when I do the best I can for all these I do the best for myself." These are "words of wisdom," uttered by a man who had proved their worth—a man who was a "tower of strength" in his generation, and whose memory will be cherished in all civilised countries where it has so long been a "household word."

The funeral took place at Gendbrugge on the 12th inst., attended by a large concourse of the population. Among those who were present were Comte de T'Serclaes, Governor of the Province; Comte de Kerchove, Bergomaster of Ghent; General Baltia; M. Dumont, Counsellor at the Cour de Cassation; Professor Morren of Liège, M. Crépin of Brussels, M. Yobert, Director of the State Railways; M. Oswald de Kerchove, M. Kickx, M. Rodigas, M. Pynaert, M. Ambroise Verschaffelt, M. J. Verschaffelt, M. Charles Van Geert, many public functionaries, and about two hundred workmen connected with M. Van Houtte's establishment. This vast crowd could not be accommodated in the house, and they therefore congregated outside in the nursery, surrounded by the brilliant achievements of their departed friend; and here Comte de Kerchove took the opportunity of addressing those assembled in feeling terms on the brilliant career of the renowned horticulturist. After an address from M. Pynaert the funeral cortege moved off in the following order:—The Corps d'Harmonie of Gendbrugge, a detachment of infantry, the clergy, the coffin covered with the burgomaster's uniform and the decorations of the deceased. The workmen of the establishment placed upon it a magnificent crown, and immediately behind was a deputation from workmen not connected with the deceased, who carried another crown as their last homage to their patron. The pallbearers were Professor Morren, M. Ambroise Verschaffelt, M. Seymourtier, Alderman of Gendbrugge, and M. Gust, Guilmot. The funeral service was celebrated at the church of Gendbrugge, which was far too small to admit the crowd, which consisted of 1500 persons.

At the grave three *éloges* were delivered; the first in Flemish by M. Guchteneire, the two others in French by Professor Morren and M. Ang. Van Geert.

A notice of M. Van Houtte would be incomplete without some reference to his nursery, even if it embraces but an outline glance and includes but its salient points. The business connections of the establishment extend not only to every nation in Europe, but also to North and South America, China, and Japan. The nursery, which we recently visited, is situated about two miles from Ghent. There is no external show of grandeur, no parade of wealth which those who are truly rich and great—the aristocracy of nature—never display. Yet if men of great acquirements and substantial resources do not revel in show, they work with perseverance in every honourable and legitimate way to achieve success; and above all they take care that what they have for the world the world shall know about.

M. Van Houtte not only availed himself of the agency of the press, but his catalogues were distributed with a liberal hand. These catalogues were not merely trade lists, but have long been manuals of reference and guides to many readers. The correctness of the several issues is generally admitted, and both the information and the manner in which it has been conveyed have been instructive and entertaining. But numerous and extensive as have been these issues, they are small in comparison with the great work published periodically

of the "Flore des Serres et des Jardins de l'Europe." This work is a monument of its late proprietor's and editor's taste and industry. It has reached its twenty-second volume, and contains 2261 coloured plates, 2800 woodcuts, and 4500 articles relating to horticulture. Specimens of these plates adorned one of the walls at the late centenary exhibition at Brussels, and were awarded the first prize for horticultural publications—the large silver-gilt medal. M. Van Houtte also published a serial work on fruits—the "Pomona"—also with coloured illustrations. In the issue of these works, and the energy displayed in producing the coloured plates as truthful and as perfect as possible, the art of chromo-lithography was considerably advanced. No more striking sight is afforded in the nursery than the preparation of these plates. In a long corridor-like building are fourteen or fifteen presses, and the entire process from the first sketching of the plants to the final colouring by hand of the several plates is conducted. That may be termed the fine art department of the nursery, and has long given employment to several workers. It is a wonderful feature of a wonderful place, and is probably—in connection with the nursery—unequalled by any establishment of the same nature in the world.

M. Van Houtte was not only a manufacturer but also a raiser of plants, and he is worthily commemorated in one of the sections of the genus *Gesnera*. *Houttea* includes the species of which *G. pardina* is a type. Of this family of plants, in their various sections, more new and valuable varieties have been raised here than in any other establishment; and when the collections are flowering their rich velvety foliage, elegant habits, and variously coloured flowers demonstrate how superior they are, and how effective for summer, also winter decoration. The *Gloxinias* are worthy of especial mention. We have seen fifty thousand of these plants flowering in the nursery, seedlings planted in leaf mould and protected by glass lights. Of this number raised annually it is seldom that more than a dozen are selected to add to the catalogue list, the remaining corms being classed in categories and sent by the hundred to different parts of the world.

It was in this nursery that the splendid *Bertolonia* Van Houttei was raised, which caused such a flutter of sensation by the wonderful combination of glistening colours playing on the foliage—a plant which won gold medals wherever it was exhibited. It is impossible, however, to enumerate a tithe of what has been raised here, but we must not pass silently the *Azaleas*, of which many of the finest varieties extant of *A. indica* have been raised in this nursery. Some of these were noticed in our report of the Brussels Show, but one, a charming semi-double white (*O. Van Eekhaute*), was omitted. It was from this nursery that *A. mollis* was first distributed, and nowhere else can such fine and striking varieties be found. *Azaleas* of all sections are planted out during the summer, and are potted or mossed in the autumn, and sent by thousands to all countries.

Camellias, too, are another staple of this nursery, and in the autumn of last year probably 500,000 plants might be seen and all grown in pots, some being plunged in brick pits and others placed in the avenues formed by Lombardy Poplars where the plants could enjoy shade without drip. Tuberous *Begonias* are here seen in brilliant array and in the foremost varieties of the day; they are also planted out in leaf soil during the summer.

The glass department is very extensive, the structures being mostly plain brick pits with span-roofs. There are also some very large houses, one being about 100 yards in length, resembling a railway tunnel; another is quite circular, having been originally erected for the *Victoria regia* and other aquatics, but now occupied with Palms. Altogether there are upwards of forty houses, with pits and frames innumerable. These are all filled with plants of almost every genus usually cultivated under glass, which are propagated and sold in a wholesale manner.

The nursery grounds are also very extensive, and are now intersected by a line of railway. The different quarters are divided by hedges of evergreens, the enclosures forming bulb gardens; gardens of herbaceous plants, in which the establishment is very rich; hardy fruit gardens, Rose gardens, enclosures for deciduous trees, and evergreens. Such is an outline of this great nursery.

Shall we enter the large white family dwelling? No need to speak of the hospitable welcome which has been so long accorded to all and every wandering horticulturist. But we may briefly sketch the business bureau where its owner for so

many years laboured with indomitable energy and herculean strength. Alas! that the central point of interest should be now the "empty chair!" There the great man sat, spurning a coat, even a vest, when in the discharge of his duties. Without rising from his chair he could by a system of wire communication summon whom he wanted from any part of his nursery. There he sat with his several clerks before him engaged in correspondence in every European language, himself

guiding, directing, and transacting his large business, and conducting his literary work. There he was surrounded by his fine library of horticultural books, amongst which, of course, a long series of volumes of the *Journal of Horticulture and Gardeners' Chronicle* were arranged and referred to. But now he is gone. An united family have lost an honoured head, and horticulture has lost one of its brightest ornaments.

As the best biography and greatest memorial of a man is



Fig. 107.—M. VAN HOUTTE.

written in his work, we have given this sketch as faintly shadowing the character of him whom many friends of many nations mourn. M. Van Houtte has left behind him a rare example of industry; he was a man of great botanical and literary ability, and his memory will be cherished at home and abroad, and his name will be mentioned as one both honoured and illustrious.

He has left a widow, two daughters, and a son, who will continue the management of his nursery. This son, M. Louis A. Van Houtte, has attained to manhood. He is a gentleman of activity and an accomplished linguist.

Our portrait is engraved from a photograph which was taken when M. Van Houtte was in full health and vigour, but for some time prior to his lamented death he was a "mere shadow of his former self."

PRENANTHES ELEGANTISSIMA.

More than a year ago we noticed this truly graceful Sonchus-like plant in the nursery of Messrs. E. G. Henderson & Son, Wellington Road, St. John's Wood. The courtesy of that firm now enables us to give an illustration of the plant as a

plant of easy growth, great elegance, and pre-eminently adapted for dinner-table decoration. The figure, however, does not convey an adequate idea of the attractiveness of this plant, of which a pleasing feature is its bright glossy green. Its foliage

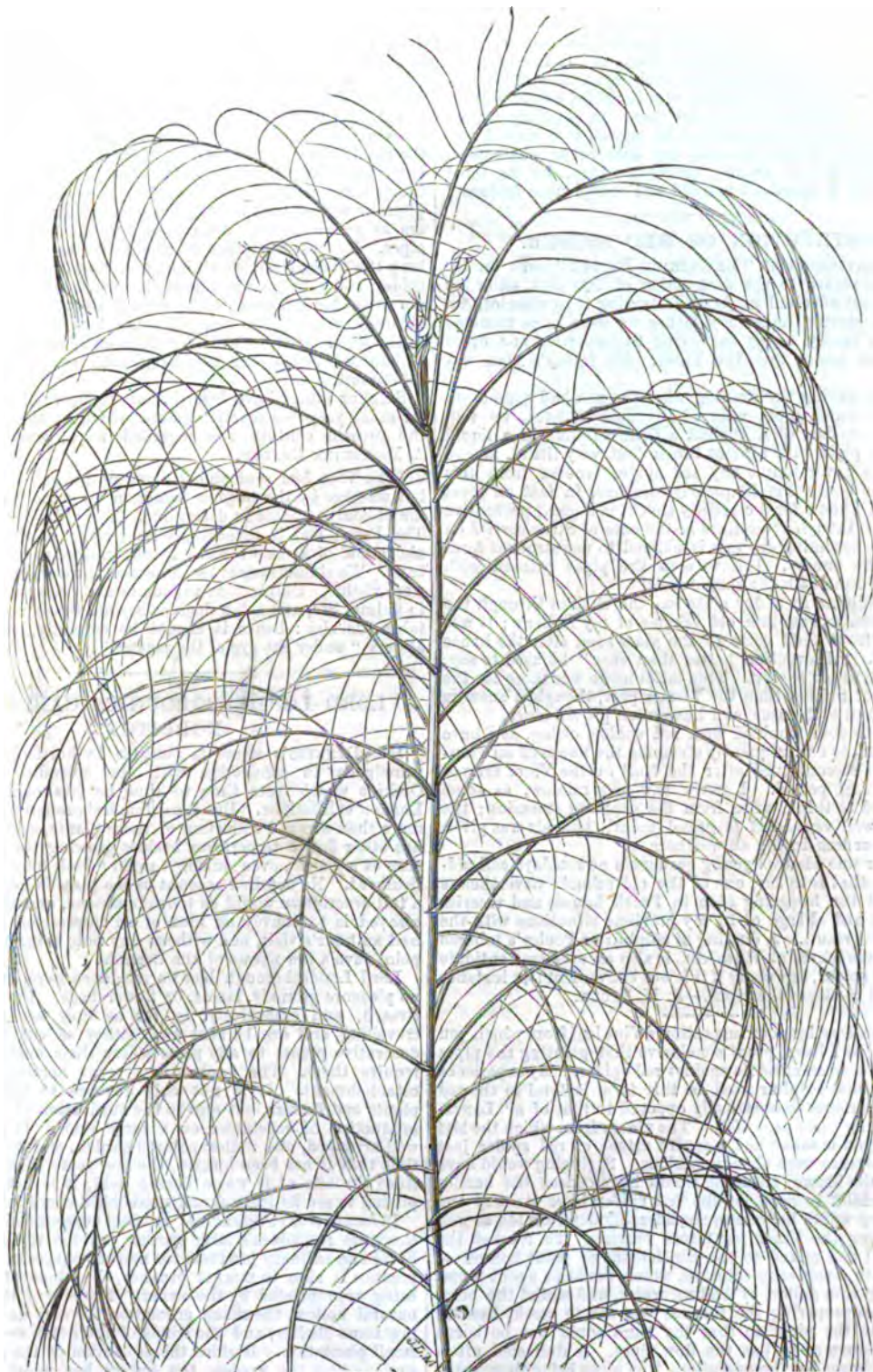


Fig. 103.—PRENANTHES ELEGANTISSIMA.

is slender as that of *Isolepis gracilis*, but more cheerful, and the *Prenanthes* is of an erect habit. Each leaf is gracefully drooping, imparting a grassy fountain-like appearance which is particularly pleasing. For a further description of this

plant we cannot do better than quote from the catalogue of Messrs. Henderson the following truthful account of this plant and the purposes for which it is adapted.

"It is a greenhouse shrub of very elegant habit from the

Canary Islands, having a green half-shrubby stem from 1 to 2 feet in height, clothed with very graceful, partially-drooping, pinnately-winged leaves, from 4 to 6 inches long, gracefully expanding, with extremely narrow, alternate, filiform, or thread-like leaf-lobes. In its young state it forms a very elegant outline, equalling the most graceful forms of *Equisetum* or *Casuarina*, and of a delicate verdure. It is admirably adapted for the finest decorative table groups, and equally valuable for conservatory baskets or a beautiful centre feature in an artistic drawing-room plant vase. In planting-out for the summer months it should first be moved to a plant frame or pit, and from thence grouped out with other subtropical and decorative-leaved plants, amongst which, by its most elegant outline, it appears a marked and conspicuous feature."

DESTRUCTION OF RED SPIDER.

As your correspondent "LANCASHIRE READER" asks for information in regard to the destruction of this pest, allow me to state a most effectual mode of destroying it in vineries, &c. When a lad serving under my father we were once troubled with it in a vinery, owing to having Strawberries and other plants in the house with the Vines. My father's plan was this:—

Some time during the evening after the sun had gone down and the hot-water pipes were of the desired heat, we well steamed the house, then applied a little sulphur in a liquid state on the pipes with a paint brush (but very little), and so left it. We never found any red spider recover from this ordeal. The house was frequently steamed, in fact on most nights; and I know for a certainty that it is a great preventive of red spider, though sometimes in the case of Strawberries on high shelves becoming dry one is obliged to use stronger force to dispel the enemy. I have seen the pipes painted with sulphur and lime with the same result.

Laying sulphur in a dry state on the shelves through the forcing season was another old scheme of my father's; it was laid on the front shelf close to the glass soon after the house was started. "Prevention better than cure" he used to say, which is a true old saying. This latter mode was more for the prevention of mildew than the former pest, though it answers equally well in both cases, as I have often proved since.

We were seldom troubled with red spider, owing, as I have always found, to our frequently steaming the house of an evening. It was discontinued after the fruit on the Vines arrived at the stoning period. I never saw any mildew, as some might be led to think, arise from the constant steaming; the house was well ventilated (a grand point), and air was given daily more or less during all weathers.

My father was what we young gardeners now-a-days call old-fashioned—that is to say, one of the old school; nevertheless I have tried the foregoing plan in Peach houses and vineries that I have had charge of in my previous situations with the same desired result. A dusting of sulphur or Pooley's tobacco powder on the leaves of Vines, &c., is also an excellent antidote against red spider, especially if it is not convenient (for instance in summer) to steam the pipes.—F. H. FAUD.

I beg to enclose for your inspection a Vine leaf from which you will obtain, as I have, proof conclusive that painting the pipes is not useless as an antidote against red spider. My experience teaches me that sulphur used in this form is fatal to the red spider—experience diametrically opposed to that of a "LANCASHIRE READER" (see page 356). The vinery from which the leaf forwarded you is taken had a severe attack of red spider just when the Grapes were changing colour. Syringing would have destroyed the bloom, steaming would have caused the berries to crack, whilst to have let the red spider have its way the present crop would have been considerably deteriorated as well as weakening the Vines for future bearing. To combat the red spider I had mixed to the consistency of paint flowers of sulphur with a soft-soap solution, which would be about 8 ozs. of soft soap to a gallon of boiling water, and whilst the composition was preparing the furnace was set to work, heating the water in the pipes so that the hand could not be borne upon the return as well as the flow pipes. A dull cold afternoon was chosen for the operation. The pipes being thoroughly hot and the house closed, the pipes were thoroughly painted by a boy with a dust-brush such as painters use, whilst I removed some laterals which experience had told me must succumb to the sulphur fumes, and I like to remain in the house watching the work done, feeling the fumes fill the house and making

certain that the pipes have two thorough coats. The house was filled with vapour, which immediately affected the red spider, it at once becoming stationary on the leaves and in a few hours found, as those on the leaf accompanying will show by their dried-up and shrivelled state, dead.

That sulphuring the hot-water pipes is not always effectual in destroying red spider will be evidenced by the liveliness of the insects you will find on the Peach leaf enclosed you along with the Vine leaf. The pipes in the house from which the Peach leaf was taken were, at the same time as the pipes in the vinery, thoroughly painted with sulphur, the difference in the result being attributable to the pipes in the Peach house not being hotter than the hand could bear: hence no sulphur fumes were given out and the house was not filled with sulphurous vapour, and so far from destroying the red spider they are as active now as before the sulphur was placed on the pipes. To heat the pipes in this house to 200° or 210° and keep the house close for a night would assuredly kill every red spider, and yet I dare not do it, for the leaves of the Peaches are as yet tender, though the fruit is ripening. The trees are vigorous, many leaves being 9 inches long and 3 inches wide at the widest part, and to keep trees in this condition inhaling sulphurous vapour for any lengthened period would not be safe practice.

Sulphur fumes have been known to be fatal to red spider for many years—a practice indeed which at the early part of the present century was regarded as a proved remedy.—A YORKSHIRE READER.

[The Vine leaf sent shows signs of having been scorched, but whether by the sulphur fumes or by some other cause we are of course unable to determine. The red spiders were dead. The Peach leaf is exceedingly fine, being of the size named above and of a deep healthy green, indicative of superior culture. We should detect no insects on the leaf, but their effects were visible. Sulphurous vapour at a certain strength is fatal to animal life, and a few degrees beyond that strength to vegetable life also: hence it should be carefully employed, and always "under the eye of the master."]

LORD LONDESBOROUGH'S GARDEN AT NORBITON.

MR. DENNING's name is familiar to horticultural readers principally in connection with the splendid examples of Orchids which from time to time he has exhibited at the London exhibitions. But Lord Londesborough has something more than a grand collection of these plants, and his gardener has other duties to perform besides growing them, as may be seen at a glance, even during a rapid "look round" the establishment. No detailed account of the place is here attempted, a full description would be too voluminous, and all that is now essayed is to convey an idea of an impression made during half an hour's visit, and without any note being taken on any point save a few names of the Orchids.

Lord Londesborough has no residence here, and there are no pleasure grounds, lawns, or flower beds. Flowers are cultivated, and extensively, so far as they are adaptable to travelling, and can be sent away either as cut blooms or as decorative plants to any place where their noble owner may require them. The garden is a great horticultural supply establishment. It is not only devoted to the growing of plants and flowers, but also to the cultivation of fruit and the production of vegetables on a large scale. It is a modern, well-arranged, and well-appointed garden, and considering the time that it has been formed, the few years that have elapsed since the site of it was a Turnip field, it is not a little surprising to see its fruitful and established condition now.

In extent it is twelve acres. It is not surrounded by walls, and therefore resembles a large garden devoted to the growing of floral and culinary products for market purposes. Indeed the practice is akin to market practice, the whole of the produce being appropriated by the owner. The site of the garden is a natural hollow, the rising ground on the east and west affording some shelter, and the winds of the north are broken by a small plantation. Besides the protection of the rising ground surrounding the garden, the hollow has another important advantage—a moist subsoil, and vegetable crops grow luxuriantly in dry weather. There is further a full and complete supply of water laid on from a source not likely to fail in the great demands which are made on it at all seasons.

The most striking features of this garden are its extensive

glass structures and their contents. The houses are large, light, substantial, and are admirably adapted to their several purposes. They consist of five ranges, each range having a length of 250 feet, a range of pits of the same length, and a number of frames. There are also large numbers of miniature frames for the protection and acceleration of vegetable crops. Indeed every requisite appears to be provided, and certainly there is not one too many, for every structure is occupied with flourishing crops of flowers, fruit, or vegetables.

The productions of this garden are immense in every department. When we consider that a thousand heads of forced Asparagus are required at one cutting, and the "come agains" for similar quantities follow each other at close intervals, and also that three hundred French Beans are daily gathered from plants in pots, an idea is afforded of the magnitude of the work. Cucumbers of course must never fail. There must not be thousands in summer and none in winter, but every day must produce the required supply fresh from the plants. To meet this supply Mr. Denning has a valuable variety of his own selecting. It is enormously prolific, the fruits being short, handsome, and of superior quality. It appears to resemble the excellent old sort Lord Kenyon's Favourite in all qualities save that of colour, Lord Lonsborough's Favourite being of a much deeper green than Lord Kenyon's. They are grown in well-heated, low, half-span-roofed houses, the plants being in perfect health, clean, and laden with fruit.

Turning to the fruit department we find the operations conducted on the same extensive scale. House after house is filled with Strawberries almost from the floors to the ridges. Many thousands of plants are forced in 48-sized pots and excellent crops are obtained. The plants are in saucers, but not in, yet over, water, Mr. Denning having planned a saucer of unusual construction. It is as if a small inverted saucer were placed in each larger one, the small one on which the pot is placed being just above high-water mark. By this plan a moist atmosphere is provided for the plants, and at the same time saturation of the roots is avoided. There are several Peach houses, some trees being trained on trellises, others being grown as standards in and out of pots. The foliage of the trees is perfectly clean and healthy, and the crops of fruit large. The trees are all young, and have not yet covered their allotted spaces. Figs and Melons are also cultivated—indeed all kinds of fruit except, perhaps, Pines.

Vines are especially noteworthy both for their numbers and splendid condition. It is clear that Mr. Denning can grow Grapes as well as Orchids, and it is extremely improbable that there can be found in Britain Vines of the same age of larger size in better condition, and carrying finer crops than the Vines in this garden. Only two sorts are cultivated, these, as may be anticipated, being Black Hamburg and Muscat of Alexandria. If I remember rightly the Vines are three years old, but were they double that age they would be in the highest degree creditable to the cultivator. The permanent Vines are planted in outside borders, the nursing canes being inside, so that there can be no fear of the fungus which will probably form on the roots of the latter when the rods are removed spreading to the roots of the permanent Vines. The rods, also the shoots, are trained thinly, every leaf having light, and the wood is strong, and the bunches are not only large but handsome and symmetrical in shape. The foliage of these Vines is scrupulously clean, so clean that it cannot have been syringed except by filtered water. The probability, however, is that the Vines are not syringed, or syringed very slightly, but that moisture is afforded almost if not quite wholly by evaporation. That water is used with great freedom in the vineries is certain, and where this is the case syringing is seldom found to be necessary. These remarks have reference to the late houses. The Grapes in the early houses have been in use for some time past, the crops being good and the berries in perfect colour.

The earliest Vines are grown in pots, which are plunged in low houses. The Vines, however, are not trained directly from the pots to the trellis, but the canes are first bent over the pots and pegged to the soil, where a fresh set of roots are emitted. Thus each Vine has two sets of roots to support it—a simple and excellent plan, worthy of mention and more general adoption. Than the Grape-growing in this garden no department is more thoroughly or more admirably managed.

A little must be said about plants—very little in comparison with the extensive nature of the work in this department. Setting aside for a moment the Orchids, the cut-flower and

decorative-plant business is on such a scale as is equalled by few private establishments. What would many gardeners think of having to supply eight hundred blooms of *Gardenia florida* a-week? Yet this number has been out for some time, and will so continue to be produced. The plants are planted out in shallow beds, and are highly fed and freely syringed. There is no mealy bug, but rich foliage and wax-like flowers. Roses are also produced on the same scale, the Teas being planted and pegged down in heated pits, and produce their blooms summer and winter.

Plants for room-decoration are grown in extraordinary numbers, more than a thousand—often twelve hundred—a-week being sent by vans to London and other places where the family require them. Probably nine-tenths of these are killed—indeed, many of them last only a few days in beauty, and by their nature are of no further use. *Mignonette* is grown by thousands of pots, the plants possessing the greatest luxuriance. All kinds of annuals are similarly cultivated—*Nemophilas*, *Clarkias*, *Collinsias*, *Linums*, &c., and especially plants and flowers which are pleasantly perfumed, one of the most useful being *Daphne Oneorum*. One house was filled with *Geraniums* in brilliant bloom, *Yasminum* and *Christine* being the sorts mainly relied on for a supply of scarlet and pink, and *Madame Vaucher* for white flowers. These good old sorts are grown by hundreds. Such is a brief sketch of the decorative and cut-flower department of this celebrated garden. But a sketch of it would be incomplete without an allusion to the

Orchids.—The collection of these plants, as is well known, is extensive, and they are as healthy and vigorous as they are numerous and rare. They are grown in large span-roofed houses on iron stages surfaced with gravel, the latter being covered, however, with *Lycopodiums*, *Panicums*, and other trailing stove plants, which not only impart an ornamental feature to the houses, but which preserve moisture around the pots and blocks of the Orchids, and thus utility is blended with beauty. The plants, many of which are exceedingly fine, are grown in pots, pans, on blocks, and in baskets, the roofs as well as the stages being occupied. Here is to be seen the hundred-guinea specimen of *Dendrobium Wardianum*, also several others of equal value and many still more rare. The splendid display of *Cattleya citrina* has been noticed, and amongst others flowering at the same time were *Otoglossums Halli*, *hystrix*, *gloriosum*, *lateo-purpureum*, *coronarium* (grand), *triumphans*, *roseum* (charming), *cordatum*, *citrosimum*, also *veixillarium* and *Boezlii* in splendid varieties and superb condition. Of *Dendrobiums* were *densiflorum*, *crassinode*, *Wardianum*, *lituiflorum*, *infundibulum*, *Jenkinsii*, *sanguinolentum*, and some others. *Epidendrums* were represented by *crassifolium*, *bicoloratum*, *onemidophorum*, *aurantiacum*, &c. Of *Cattleyas* several fine examples were seen. *Cattleya speciosa* had flowers 9 inches in diameter, and *C. Skinnerii* was remarkably high-coloured; *Lælia Lindleyana* was also blooming; *Vanda cœrulescens* had twenty-nine flowers on one spike; *Ionopsis paniculata* was attractive by its purity; *Utricularias* were flourishing in baskets, and *Phalenopyses*, including *P. Porteana*, were in vigorous health and fine bloom.

This noble collection of plants is at any time worthy of a visit. What strikes the visitor is the pleasant temperature of the houses. There is no stifling atmosphere, no oppressive closeness, no waste of coals, and the plants are the better for it.

Such is an outline of this renowned garden—a garden of thorough gardening, a garden which demands and receives skilful superintendence and continued and unremitting attention to preserve it in high state of keeping, and to provide an ever-flowing stream of products of extraordinary extent and variety. Well is it that we have such noblemen as Lord Lonsborough to provide so liberally for the practice of horticulture, and well also that we have such able men as Mr. Denning to carry that practice out so assiduously and successfully.—J.

GRIMALKIN VERSUS NEMOPHILA INSIGNIS.

I sowed last year a shilling's worth of blue *Nemophila*, but my cat, a most inquisitive large black Angora, and those of my neighbours of various breeds, persisted in nibbling and rolling on the young seedlings directly they appeared, so that very few plants reached maturity. This year I have determined to raise a good crop, and my cat is equally resolved I

shall not. One day I entered the garden with large branches of Furze in my hands; Grimaldin saw me and knew at once "something was up," therefore hid himself behind a Currant bush and watched my proceedings. When I had carefully covered the very young plants with the Furze and was surveying my work with exultation, he rushed forward and removed the largest branch with his nose. I flatter myself he received a good pricking, as he did not return to the charge.

I then sowed some seed in those capital seed-frames manufactured at Crowhurst. Yesterday the soil was very moist, and the sun I suppose drew out the scent irresistibly. Pussy placed himself on the cracked glass of one frame, put his nose close to the crack and sniffed in a most exaggerated manner, looking at me between each sniff. I put a Pea-wire over some seedlings, this he evidently considers a sensible arrangement and leaves unmolested. I fancy only the roughish white-spotted seed-leaves are the attraction. Am I right? I shall be extremely glad to hear such is the case, as, although I think up to the present time I have come off with flying colours, still it will be a great relief to be able to cry peace, knowing that I can (after the said seed-leaves are withered), leave *Nemophila* to its own devices safe from attack by the insurgents.

[There are some plants of the scent of which cats are so excessively fond that they demonstrate their delight by many whimsical gesticulations. The root of Valerian and Catmint (*Nepeta cataria*), are said to be thus favoured by them, and this is not the first instance made known to us of their liking for the *Nemophila*, and unfortunately they have a singular liking to basking among even strong plants. Rue is the aversion of most cats, and we have known some convulsed when made to smell it.]

SPUR SYSTEM OF PRUNING VINES.

A PARAGRAPH out from the "Doings of the Last and Work for the Present Week" has been inserted in the pages of one of your contemporaries, and has given rise to some discussion. I had been consulted about some out-of-door Vines, the varieties being Royal Muscadine or Sweetwater. The rods were trained upright to a high wall and had been close spurred-in for many years. The result of this treatment has been that they have never showed a bunch for several years, and under the same system this variety of Vine never would; but if young rods are trained up from the base of the Vines I can venture to predict that they will bear next season on that young wood.

The readers of your contemporary have taken it for granted that all sorts of Vines were intended, and seem to think that I have led your readers to believe that if a Black Hamburgh Vine was spur-pruned for a few years it would cease to bear fruit. There are rods of Black Hamburgh at Loxford ten years old spur-pruned, and they bear fruit freely. The fruit is as good, but the bunches are not nearly so large as those produced from young wood.

To grow good fruit of Royal Muscadine or White Sweetwater out of doors I again repeat, as the result of some experience, that it is best to train up young wood frequently and to cut out the old rods after from three to five years according to the height of the wall. None of your readers seem to have misapprehended me, but still this explanation may be useful.—J. DOUGLAS.

NOTES AND GLEANINGS.

We are glad to hear that it is intended to raise a MEMORIAL in Belgium to the late M. L. VAN HOUTTE of Ghent. It has been proposed that British horticulturists unite in the good work. By all means. We hope soon to announce the formation of a committee to carry out this laudable project, for no man has done more for the advancement of horticulture than the late M. Van Houtte.

M. VOGEL of Munich finds that seeds germinate more quickly if moistened with camphorated water than with water simple.

M. BERTOT of the Paris Academy has just made known a simple method of taking IMPRESSIONS OF PLANTS, requiring only a large sheet of paper, some olive or other oil, blacklead, ashes, and resin or colophony. The paper is first lightly oiled on one side, then folded in four so that the oil may filter through the pores, and the plant may not come in direct contact with the liquid. The plant is placed between the leaves of the second folding, and in this position pressed (through other paper) all over with the hand, so as to make a small

quantity of oil adhere to its surface. Then it is taken out and placed carefully on white paper; another sheet is placed above, since two impressions can be taken, and the plant is pressed as before. On now removing it an invisible image remains on the paper. You sprinkle over this a quantity of blacklead or ashes, &c., and distribute it in all directions, as in applying sand to writing; the image then appears in all its parts. With an assortment of colours the natural colours of plants may be reproduced. To obtain fixity resin is added to the blacklead previously in equal quantity; the impression is fixed when it is exposed to a heat sufficient to melt the resin.—(*English Mechanic*.)

We sincerely regret that on account of ill health Mr. ROBSON is about to retire from the management of the gardens at Linton Park. His wages will be continued as usual—namely, £100 a-year. He is to be succeeded by Mr. MacLaren, foreman in the gardens of the Earl of Wemyss at Gosford in East Lothian.

THE late Mr. RICHARD HEADLY'S FLORISTS' FLOWERS will be sold on the 23rd day of this month. Mr. Headly was well known as a most successful exhibitor, and amongst the Tulips will be found the celebrated John Linton, Sarah Headly, John Thornley, &c. Besides the named varieties there will be sold a large collection of valuable breeders. Stapleford is within five minutes' walk of the Shelford station on the Great Eastern Railway.

UNDER the modest title of "THE OLD DAYS OF PRIOR'S PATENT CANDLE COMPANY," Mr. George Wilson has given an interesting and most instructive account of one of the most important of our modern national industries. The title rather conveys the idea of the history of a commercial company, but it is in reality the account of a series of chemical discoveries applied to the development of a great manufacture. Those who remember what we had to depend upon for domestic illumination forty years ago—the disgusting smells caused by the combustion of animal fats, the old snuffers and snuffer-trays, and above all the feeble glimmering light, must mark the contrast and feel that in the present day we enjoy light under more advantageous circumstances. For these advantages we are largely indebted to Mr. Wilson personally, who was the active managing director of that great undertaking, and to whose indomitable energy under great difficulties and much opposition it became the greatest factory of its kind in the world. It is not the mere manufacture of candles and other products of fats that is treated of in this book, but we have described "the new process of obtaining glycerine," which was a discovery of Mr. Wilson's, and by which so many benefits have arisen to the human race. We commend this little work to the attention of all our readers as a book which is at once amusing and instructive. It contains a story which is full of interest and incident.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

THE weather is dry with very keen east winds, and in consequence of this the usual garden pests, principally aphids, have made their appearance. Prompt remedies are necessary on the first appearance of insects, as if they are allowed to remain the leaves speedily curl up, which very much protects the insects from any injury that would be caused by syringing with the usual aphid washes.

This is just the weather for destroying weeds, and we have constantly kept the hoe at work amongst the small trees in the borders and also the Strawberry beds. The flower trusses of the Strawberry plants are pushing up strongly, and if the weather should be fine the flowers will soon open. We are always anxious to have the beds perfectly free from weeds at this season, as rendering it unnecessary to go amongst the plants when they are more advanced in growth. If no rain falls soon we shall mulch and water the Strawberry beds; but while it continues so cold at nights water will be better withheld unless it is absolutely necessary. The thermometer fell early in May to 28° Fahr.—that is, 4° of frost, at Loxford; but in the same week it was 7° at Ripon, and at Chatsworth it was as low as 28°—that is, 10° of frost.

Pear trees on the walls are making very strong growths, and in the course of a few days we shall go over them and pinch off all foreright shoots, leaving two or three leaves at the base of the young wood. Peach, Apricot, and Plum trees on walls will also claim attention.

The early Peas have suffered much by the frost-winds; but ours is an earthly paradise compared to the northern districts.

Our garden quarters are well sheltered from the east side by a good wall, and they are further protected by the rows of fruit trees planted close and trained pyramid fashion.

MELON AND CUCUMBER HOUSES.

After this time of the year the details of culture are very simple. The Melons are well supplied with water at the roots until near the time of the fruit ripening, when it should be applied with caution, and if the leaves are free from red spider the fruit will gradually ripen off. We generally try to manage so that there is a succession from different plants. This can easily be managed by proper attention at the time of setting the fruit. An early variety such as Gilbert's selection of Victory of Bath should be set as soon as the female blossoms can be obtained, say three nearly open at one time. The same sort, with Scarlet Gem, may be set a week after, and a week later other sorts. One of the greatest difficulties in the culture of Melons is the tendency of the plants to damp-off close to the surface of the ground; indeed, there are gardeners who are afraid to water their plants in case they should damp-off. But this is an error; Melons require a good deal of water to grow them well, and they are more likely to suffer if they do not have enough than if they have a good supply. It is best to place the plants on a raised mound, and not water quite close to the stem.

Cucumbers also delight in a good supply of water, but it may be overdone if there is not sufficient drainage underneath the bed. The surface of the ground under Cucumbers is also better for frequent mulchings of rich compost; the young rootlets work into it with marvellous rapidity, and the effects are soon visible in the more healthy growth.

Kidney Beans in pots soon suffer if they are not frequently mulched. If this is attended to, and the pods gathered as soon as they are large enough, the plants will continue bearing for a long period. Manure water is also very good for the plants.

PLANT STOVE AND ORCHID HOUSES.

In our own plant stove there is not much room for *Gloxinias*, *Achimenes*, and other softwooded plants of this class, but they are both useful plants for summer flowering, and in July they may be removed to the greenhouse when in bloom, where they last in great beauty for a very long time. They cannot be grown well if crowded together amongst specimen stove plants. They do not like much sunshine, and some growers fancy that they may be pushed into any corner; but such treatment tells upon the plants very soon, and neither *Achimenes* nor *Gloxinias* will flower well if they are permitted to become unhealthy. They do very well in an open compost of two parts fibrous loam and one part fibrous peat, with a little decayed stable manure added to it. The pots may either be plunged in a moderate bottom heat or be placed on a stage. In either case they ought not to be far removed from the glass; and to obtain sturdy specimens that would not suffer afterwards in a well-ventilated greenhouse the growth must not be made in a very high temperature; from 55° to 60° is a good temperature, closing the house early in the afternoon, when the degree of heat from the sun may rise to 85°. There are now very many fine varieties of the *Gloxinia* and also of the *Achimenes*, and their showy flowers are quite a distinct feature either in the conservatory or stove. *Vinea alba oculata* and the rose-coloured variety are not so much grown now as they were twenty years ago, or as they deserve to be. Young plants should be grown freely, and the points of the growths should be pinched out continuously to make compact specimens. They used to be exhibited many years since quite 4 feet across, and covered with their charming flowers. They may be had in flower almost at any season by pinching and picking the flowers off. *Stephanotis floribunda* is now a mass of bloom. A healthy robust specimen of this is exceedingly valuable, and is easiest managed if it can be planted out in the stove, or any house where the winter temperature is not lower than 55°. Its greatest enemy is mealy bug, and if the leaves are not cleared from this pest before the flower trusses appear it will despoil the delicate texture of the flowers.

Other climbers require tying and the shoots thinning-out where they are becoming too crowded. In most places the climbing plants are allowed to become too crowded. When this is the case good flowers are never produced, and, what is of more importance, sometimes they are not so abundant. Another evil resulting from a thicket of evergreen growth overhead in plant houses is that neither sun nor air can act beneficially upon the plants.

All hardwooded plants intended to make good specimens should now be grown-on freely, and they must not be allowed to become root-bound, for that is fatal to rapid and healthy growth. Plants that are not repotted until the roots are quite matted round the sides of the pots suffer in this way. When the plant is turned out of the pot the best roots will be found coiled round and round the bottom of the pot amongst the drainage. A handful of them may sometimes be uncoiled, reaching from 2 to 6 feet in length. These must be cut off, and the ball of mould pricked round with a pointed stick. If plants are potted as they ought to be before the roots are too much matted, then it is not necessary to disturb the roots.

Orchids that are making their growth should be well supplied with water, and as soon as the young rootlets are thrown out it is the signal to repot or rebasket the plants if necessary. There are still many persons who overpot Orchids, and it is not uncommon to see a miserable Cattleya, with but one sickly growth, placed in the centre of a 9 or 10-inch pot when a pot 8 or 4 inches in diameter would be the most suitable. In the large pot the compost will become sour however porous it may be. The best way to do with plants that have lost nearly all their roots from overpotting is to shake all the compost away from the base of the plant, and then to wash the root-stock with tepid water; the plant should then be repotted on clean drainage in a small pot, and be placed in a close moist atmosphere. The drainage should be moistened frequently; but Cattleyas must not be syringed overhead. The roots will soon begin to form, and after a while some fibrous peat must be placed over the drainage. Many Orchids are in flower at this season, and the house where they are should be kept cool and the atmosphere only moderately moist.

FLOWER GARDEN.

It is too cold to plant out any bedding plants as yet. They are mostly out of doors, and can be protected by frigid dome coverings. The more tender subjects are yet in a glass-covered pit. If the temperature should fall to the freezing point tender plants would be ruined for the season even under a slight covering. Calceolarias are out in the open ground, and are not covered even in cold nights. All Pelargoniums of the zonal section are freely exposed to the weather, but just slightly covered if there are signs of frost. The beds are being made ready for receiving the plants. If we have a shower of rain with a west wind we shall begin to plant out at once. It may be that it will be necessary to plant out before rain comes, in which case the ground will be watered; and a few hours before commencing to plant the plants will also be well watered, and in planting them out we see that the roots are let well into the ground. Much injury is caused to many plants if the roots are too near the surface. We have been pricking out Asters, &c., in boxes for later blooming. Asters are such useful flowers either for cutting from or for the decoration of the flower garden that it is necessary to prolong the bloom for as long a period as possible.

Auriculas are being repotted—indeed, we have very nearly finished them off. Nearly all the best growers repot at this season. The best time to repot is when the plants are making root freely. Any small offsets are also taken off at this time. They are potted in very small pots, and the pots are placed in a close hand-light.

Carnations and Picotees are now well advanced, and the flowering growths are tied to sticks as they advance. Last year it was necessary to be frequently looking over them for green fly, and to dust those attacked with dry Scotch snuff. This year the plants were well fumigated with tobacco smoke before they were removed from the frames. Roses also require considerable attention now in order to hunt out and destroy the "worms" in the bud.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SHOWMEN will oblige us by informing us of the dates on which exhibitions are to be held.

CRYSTAL PALACE. Flower, May 19th and 20th. Roses, June 16th and 17th.
TIVERTON. May 24th and 25th. Messrs. A. Payne and J. Mills, Hon. Secs.
WESTMINSTER AQUARIUM. May 20th and 21st, July 5th and 6th.
UNDERCLIFF. May 31st. Mr. T. H. Clough, Hon. Sec.
MANCHESTER (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.
SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fildge, 89, York Street, Sec.
SOUTH KEESE (LEYTON?). June 18th. Mr. G. E. Cox, Wilmet Road, Leyton, Sec.
IPSWICH.—June 15th, July 6th, and September 17th. Sec., Mr. W. B. Jeffries, Henley Road, Ipswich.
EDINBURGH (Scottish Fanny Society's Show). June 16th. Mr. N. M. Walsh, 1, Waterloo Place, Edinburgh, Sec.
COVENTRY. June 19th. Mr. T. Wilson, 8, Portland Terrace, Sec.
MAIDSTONE (Roses). June 21st. Mr. Hubert Beasted, Rochester, Maidstone, Sec.
FARNHAM AND SOUTH HAMPSHIRE. June 21st. Mr. H. Smith, Sec.
SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.
EXETER (Roses). June 23rd. Mr. T. W. Gray, Hon. Sec.
BRIGHTON (Roses). June 24th. Mr. J. Payne, Treasurer.
BURTON-UPON-TRENT. June 25th. Mr. F. S. Dunwell, Sec.
LEADS. June 25th, 26th, and 30th. Mr. James Birkbeck, Delph Lane, Woodhouse, Leeds, Sec.
RICHMOND. June 25th. Mr. A. Chancellor, Hon. Sec.
WEST OF ENGLAND (HARFORD). Roses. June 26th. Rev. C. H. Palmer, Crendonhill, Sec.
FROTH (Roses). June 29th. Mr. A. B. Baily, Hon. Sec.
WIMBORNE (Roses). June 29th. Mr. C. Parker, Hon. Sec.
TORBAY. June 29th and 30th. Mr. W. Fane Tucker, Capt., Braddon Tor, Hon. Sec.
OXFORD (Roses). June 30th. Mr. C. B. Ridley, 115, Aldate's, Hon. Sec.
BROCKHAM (Roses). July 1st. Rev. A. Charles and Mr. C. Mortimer, Secs.
MANSDEN. July 1st. Mr. J. H. Edmondson, Hon. Sec.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY. July 5th and September 18th GUNDEL. July 5th. Mr. Alfred King, Sec.
SOUTHPORT. July 5th, 6th, 7th, and 8th. Mr. E. Martin, Sec.
NEWARK (Bosses). July 6th. Mr. F. B. Dobney, Sec.
ALEXANDRA PALACE. Bosses, July 7th and 8th.
EALING, ACTON, AND HANWELL. July 11th (at Fordhook). Mr. B. Dean, Ealing, Sec.
HELENBURGH (Bosses). July 13th and 18th. Mr. J. Mitchell, Sec.
WIMBOROUGH. July 13th and 18th. Mr. P. Appleby, S. Linden Cottages, Hon. Sec.
KILMARNOCK. Bosses, July 18th and 19th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.
TONBRIDGE. July 19th. Mr. W. Blair, Hon. Sec.
WREXHAM. July 25th. Mr. J. B. Shirley, Hon. Sec.
HADINGLEY. July 26th and 27th. Mr. T. Atkinson, Burleywood, Hadingley, Leeds, Sec.
BRIGHOUSE. July 29th. Messrs. C. Jessop & E. Rawnley, Hon. Secs.
KILBY (Flowers). August 1st. Mr. C. E. Bracebridge, Sec.
HEWORTH (Horticultural). August 2nd. Mr. R. H. Felton, Hon. Sec.
RAWTENSTALL (ROSEDALE). August 4th and 5th. Mr. M. J. Lonsdale, Sec.
TAUNTON DEANE. August 10th. Mr. F. E. Woodford, M.D., and Mr. Clement Smith, Hon. Secs.
FILBY. August 11th. Hon. Sec., Mr. Walter Fisher.
CLAY CROSS. August 15th. Mr. J. Stallard, Clay Cross, near Chesterfield, Sec.
WESTON-SUPER-MARE. August 15th and 16th. Mr. W. B. Frampton, Sec.
PRESTON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.
SHERWESBURY. August 16th and 17th. Admits & Naunton, Hon. Secs.
MIRFIELD HORTICULTURAL. August 19th. Mr. George Senior and Mr. John Rushforth, Hon. Secs.
NEWBURY. August 22nd. Mr. Henry Seymour, Hon. Sec.
CHESTER. August 23rd. Mr. B. Thorne, Hon. Sec.
RAMSGATE (ISLE OF THANET). August 23rd. Mr. R. B. Sotherton, Broadstairs, Sec.
SHATON BURN. August 26th. Mr. R. Richardson and Mr. W. Elliott, Secs.
MONTROSE. September 1st and 2nd. Mr. Alex. Burnett, 2, High Street, Sec.
DUNDY (International). September 7th, 8th, and 9th. Mr. W. R. McKelvie, 26, Euclid Crescent, Sec.
GLASGOW. September 13th and 18th. Mr. F. Gilb. Doughall, 167, Canning Street, Sec.

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BUILDING ON A PARTY WALL (*Inquirer*).—You have no legal right to build on the top of a party wall. Your peach house would have been all the better for being raised by woodwork, and with ventilators on your side of the wall.

ECHINERIA RETUSA (*H. L. Hammond*).—It belongs to the same natural order as the Houseleek, and is allied to that genus.

ARRANGEMENT OF BEDDING PLANTS (*A. B. C.*).—Let the central circle contain some such mixture as you propose, with an edging of *Colera*, using all the varieties you name with the exception of the *Zea* and *Fuchsias*, which should go in the two end beds, thus imparting a distinct character to them, and a pleasing variety to the entire group. Exercise caution in your use of the *Zea*, as it is a striking plant, a little too much of which would mar the beauty of the whole design. The narrow chain beds should have dwarf plants of rather bright but not glaring colours—say grey, pink, blue, or purple, yellow, crimson, or carmine, but no bright scarlet with yellow.

HARDY ROCK PLANTS (*Rev. C. Hynes*).—Plants, not seeds, of the Lithospermum and Antennaria may be had from any respectable nurseryman. Messrs. Backhouse of York, who make rock plants a speciality, keep up a stock of each kind. Have also a few sorts of *Hellianthemum*; of this, however, many lovely varieties may be raised from seed, which any of the large metropolitan seed firms can supply a large mixed packet, costing only 6d. Seed of *Pyrethrum* can also be obtained at the same price from the same source. *Silene maritima* (Sea Catchfly) and its handsome double variety *S. maritima plena* are both kept by Backhouse, but we fear few other nurserymen afford these useful plants a place. Our own plants of the single variety were procured from their wild habitat on the south-west coast. *Linaris cathartica* is our only difficulty. One of its wild haunts was the source from whence our supply was obtained, and although the nurserymen find no place for it, yet you will have no difficulty in doing as we have done, for there is hardly an old wall or ruin which this charming little plant does not grace with the elegant drapery of its slender growth.

BLACK CURRANTS WITHERED (*Stirling*).—The withered branches demonstrate that the bushes lack vigour. We have seen many instances of the branches dying, and in every case the bushes were either weakened by old age or were growing in dry soil. We have found a remedy by pruning rather severely in winter—cutting down a portion of the bushes and inducing the production of young and stronger shoots, and surfacing the ground with manure. If the mulching be done in winter watering is not necessary. We should advise that a thorough soaking of liquid manure be given your bushes, covering the ground immediately with manure to arrest evaporation, then will sufficient nourishment be afforded, and the evil of which you complain be arrested.

GERANIUM SPORT (*J. J. Lancashire*).—Neither the parent nor the sport are equal either in truss or foliage to many others.

TULIPS (*O. J.*).—We cannot tell you who would undertake to name your collection; those who are capable live far away from you. The florists in your county of Somerset could aid you.

A GARDENER'S WILL (*Anthony*).—We cannot tell you whether he died intestate, but you may easily ascertain by referring to the indexes kept at Somerset House, and we copy the following very useful directions from the *English Mechanic*:—Go to Somerset House, and cross the quadrangle to the Will Office. Proceeding to the extreme end of the room, buy a "search stamp" (1s.) from the attendant. This take to the clerk on his right, and hand it to one of the clerks, giving the deceased's name, which name the clerk will write on a slip of paper. Then search the indices (which are in racks close to you), and thereupon run through the books (the names are alphabetically arranged) until you come to the name answering the proper description. On finding it take the index book to the clerk who took your stamp, who will mark the reference number on the aforesaid slip of paper, and tell you to take such slip to another desk, when you will either have the actual will produced or the official copy made in the books, according to its date. You may then read it, but must make no notes; only being allowed to take the names of the deceased, the executors, &c. If you want a copy of the whole, or any part of it, the clerks will tell you how to obtain it. Cost, only 1s. for search and reading. Copies, 6d. per folio, with 1s. 1d. for stamped paper.

SEEDLING PANSY (*R. N.*).—It is a good border flower, but not superior to many other blue selfs. *Viola* is the botanical name of a genus, of which the Pansy is one of the species, distinguished as *Viola tricolor*.

VINE LEAVES INJURED (*A. M. C.*).—No insect is to blame. The stalks and other parts are gangrened because the roots do not supply sufficient sap to sustain the growth of the branches and foliage. Water abundantly, and with weak tepid liquid manure once weekly. Pick off the diseased leaves.

STRAWBERRIES MILDEWING (*V. R.*).—It is not easy to tell why they are affected with this parasite, but it is very likely that the rather close atmosphere of the stove contributed to it. We have had them mildewed under all sorts of conditions. On its first appearance dust the leaves with sulphur, and the hot-water pipes may also be painted with it.

LIST OF ORNITHANTHEMUMS (*West Surrey*).—Gluck, large-flowered; Anemone, golden yellow; Guernsey Nugget, primrose; Harward, purple, florets silvery at the back; Le Grand, reddish lilac; Mag Marriettes, sulphur white; Nil Desperandum, dark red, incurved; and Ocedon, purple. With the exception of Gluck, which is a large-flowered Anemone, and Mag Marriettes (Japanese), all the others belong to the large-flowered section. They are all good sorts. Six best large-flowered, not including any in your list, are Jardin des Plantes, golden yellow; Empress of India, pure white; Lady Harding, rose; Mrs. Bunde, white; Prince of Wales, dark red; Princess Teak, blush. Six Japanese are Brouse Dragon; Elaine, very large double white, early; Fair Maid of Guernsey, very fine large white; Grandiflorum, a splendid golden yellow late-flowering sort; Purpureum album; Red Dragon. The best three Pompons are Oedo Nulli, white; Golden Oedo Nulli; and Bob, dark crimson.

GRAPE VINE FOR EARLY HOUSE (*A.*).—Foster's White Seedling. From 1 to 1½ foot is too shallow for a Peach border, but the trees would do it if they were well supplied with water. We annually grow four and five dozens of fine fruit on pot trees, each tree being confined to about a bushel of loam.

COCOA FIBRE REFUSE FOR STRIKING CUTTINGS (*Kittie*).—It will answer for striking cuttings, but is the better of an addition of an equal proportion of silver sand. This mixture would, no doubt, grow *Geraniums* and *Fuchsias*, but they would grow too grossly to flower freely. We advise three parts turfy loam to a part each of leaf soil and cocoa refuse, with a sixth part of sand as a more suitable compost for these plants. The cocoa refuse mixed with the soil of beds will be of benefit after the first year, its permanency depending in a measure upon the quantity used.

ADONIS BERBERIS (*B.*).—We do not think the berries will produce any injurious consequences on those eating them, but we have no experience.

THINKING LILY OF THE VALLEY (*Idem*).—It is anything but desirable to disturb a very old, compact, and vigorous bed of these chaste sweet plants, especially as you say "they do very well indeed." Had they not given you satisfaction we should have said then let the plants have more liberal treatment, but it is always a capital policy to let that doing "well" alone.

FEUILLARY CULTURE (*M. E. H.*).—They require to be grown in deep rich light soil well drained, and as your plants do not produce offsets we presume the soil is poor. Add some well-decayed manure and leaf mould to the soil, and top-dress with a rich compost. An open situation but sheltered from winds is most suitable, and preferable to a shaded site.

WANTING POTATOES (*A. Dumbell*).—Being planted 5 inches deep on the flat they will not require much earthing-up, but we should nevertheless draw a little soil to them, so as to keep the tubers from greening.

AURICULAS AFTER FLOWERING (*Idem*).—Remove them to a frame with a north aspect, elevating the frame on bricks at the corners, and admit air freely, protecting from heavy rains. To give full particulars would take up more space than we can spare, but the essentials of treatment are given in our "Florists' Flowers," which may be had from our office for 5d.

CUTTING THE TRUSSES OF YOUNG RHODODENDRONS (*Idem*).—By cutting the trusses you will remove the growths which produce the flowers of next year, and will keep the plants from so soon attaining a size they otherwise would were the flowers not cut. We are careful in cutting from young plants to remove such as are produced by straggling shoots, and this, so far from being disadvantageous, induces to more shapely and compact growth.

PEAR LEAVES DISEASED (*Peter Pullat*).—The light sandy soil is the probable cause. Mulch over the roots, and a plentiful supply of water during dry weather will prevent the spotting.

CARPET BEDDING (*W.*).—*Veronica incana* is 4 to 5 inches, and *Achillea umbellata* 3 to 4 inches in height, both being of course susceptible to the influence of rich or poor soil. The *Veronica* from its size would be preferable for your purpose, but we do not see why you might not contrive to use the *Achillea* by raising the soil slightly for it above the level of that in which the other plants are put, and by a little extra care in watering. Certainly, for intrinsic beauty and effectiveness it is far preferable to the *Veronica*.

PLANTS WITH BLUE NEMOPHILA (*E. O.*).—The very best plant with pink flowers to associate with *Nemophila insignis* is *Saponaria calabrica*. The seed should, however, have been sown a month or more ago. Plants raised from seed sown now would of course be proportionally late in coming into flower. Failing the *Saponaria*, some such pink *Verbena* as *Polly Perkins* or *Madame Maquign* would answer well. *Polemonium caeruleum variegatum* and *Geranium Lady Plymouth* both have a soft yellow variegation. Both form handsome plants, the growth of the *Polemonium* being particularly graceful. Either of them would tell well with the *Nemophila*. Consult your own taste as to which to put next the grass, and which inside. Either colour would be in

good taste, but the variegated foliage would certainly prove most striking outside. Golden Pyrethrum is only good next the grass in a dry season, a little excess of rain causing it to become offensively green. This was strikingly exemplified at the Crystal Palace last year.

CARPET BEDDING (*Joseph Carrick*).—Most of the succulents suitable for this purpose may be kept in a cold frame from which frost and excessive moisture is excluded. Some of the most useful are *Echeveria secunda* glauca, *E. glauca* major, *Kleinia repens*, *Pachyphyton bracteatum*, and *Harworthia cymbiformis*. Sorts that are quite hardy are also numerous. The three most popular are *Sedum glaucum*, *Sempervivum californicum*, and *Sempervivum montanum*. These—with the aid of Golden Pyrethrum and blue Lobelia, the hardy pearly grey-leaved *Santolina incana*, and equally hardy *Arabis alpina variegata*—will afford material for some pretty designs, which could of course be materially enriched and diversified if you have any means of procuring or wintering the more delicate *Coleus*, *Alternanthera*, *Iresine*, and variegated *Mesembryanthemum*, as then you would be enabled to add deep crimsons, pink, carmine, and pale yellow to your designs.

FRACH LEAVES SPOTTED (*E. B. T.*).—If the leaves sent are fair samples of the foliage we cannot coincide with your opinion that the spots are the result of rich soil. We rather suspect that you have been cropping your old trees too heavily, and perhaps their wood in consequence was not thoroughly matured last autumn. Certainly the leaves lack vigour, being small, thin, and deficient in colour. Foliage of this character is especially susceptible of injury, and great care in ventilation is necessary—a little air being admitted all night, adding more as the temperature rises very early in the morning. If your trees are heavily cropped we should thin-out the fruit, pick off all the worst-affected leaves, and give the roots a soaking with tepid soot and guano-water. Immerse a peck of soot in about thirty gallons of water, and add to each gallon at the time of applying it half an ounce of guano. A syringing also of perfectly clear soot water would be beneficial. We think deficient root action is, in a great measure, the source of the injury of which you complain.

PAINTING HOT-WATER PIPES (*Horace*).—Brunswick black mixed with linseed oil may be used without injuring the plants.

URINE AS A MANURE (*H. F.*).—You had better mix with every 7 lbs. of it 1 lb. of gypsum (sulphate of lime). The fresher the urine is when so treated and applied to the soil the better. It is a very powerful manure, and a very small quantity is sufficient for flowering plants. To kitchen-garden crops it may be applied more liberally.

UNDERGROWTH AMONG SCOTCH FIRS (*Things Wick*).—Provided the trees are not so close as to make a dense shade, and the soil being sandy, the very best plant for your purpose is the wild Fine-leaved Heath (*Erica cinerea*), and with it you may mingle the Ling (*Calluna vulgaris*). Put in very small plants of not more than two or three years' growth a few inches apart, let them grow freely for a couple of years so as to become thoroughly established, and you may then treat them as you please, for they bear close-pruning admirably; and you might either keep the whole of them close to the surface by means of an annual mowing with a scythe, or part might be so treated, leaving an occasional clump to grow wild. By no means attempt doing this with old plants, as failure would inevitably ensue. Should you follow our advice in this matter, and require a little variety in the clumps—Ivy, the small-leaved Periwinkle and St. John's Wort (*Hypericum calycinum*) will all flourish under trees, and are all desirable from their evergreen character. A little Bracken and other hardy Ferns would also tell well in summer. Moss is not recommended for such a position, from its liability in sandy soil, to become parched and rusty-looking in hot weather.

INSECT ON FERNS (*E. B. T.*).—It is the turtle scale (*Coccus testudo*). Dip the Ferns into a mixture of soft soap and flowers of sulphur, each half a pound, of tobacco a quarter of a pound. Mix the sulphur and soap into a paste, boil the tobacco in a quart of water, mix it with the paste, and add the whole to a gallon of water.

INSECTS ON BARK OF PEAR TREE (*H. H. B.*).—The small grubs which have formed burrows in the bark of your old Jargonelle and Swan Egg Pear trees are the caterpillars of a small moth, probably *Geopophora sulphurella*. We believe it is only in the dead and decayed bark that they occur. If so, the bark should be rasped off.—*L. O. W.*

NAMES OF FRUITS (*Connaught Subscriber*).—1, Winter Codlin; 2 and 3 cannot be identified.

NAMES OF PLANTS (*E. J.*).—1, Leaves only; 2, *Veronica salicifolia*; 3, *Berberis Darwinii*. (*T. P.*).—1, *Lunaria biennis*; 2, *Ribes flavum*. (*G. J.*).—*Acer palmatum*. (*W. T.*).—*Berberis Darwinii*, Darwin's *Berberis*. (*Jackson*).—1, *Polystachya buxifolia*; 2, *Pteris cretica*, var. (?); 3, *Deutzia crenata*, fl.-pl.; 4, *Kriestemon buxifolius*; 5, *Diosma ericoides*, *L.*

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY AND BIRD NEWS AND QUERIES.

We have in one of our chicken houses two birds' nests. The house is thatched, and under the thatch a Wren has built its little home, and now has six eggs; while the Blackbird built on a cross beam where some furze had been placed to keep birds from roosting, and has four eggs due to hatch this week. They are excellent friends these two couples, and are very tame. The door is always open, in fact has been removed that a hen coop may always be there in shelter for a young brood. The inmates of the coop are Silkies, and the Wrens would go into the coop and pick up the silky feathers which fell from the mother hen before our eyes to line her nest. Unlike most Wrens, they do not mind how often we put our fingers in the nest, and have never objected from the first. The cock Blackbird is generally sitting on the coop when the hen is on her nest.

We have just received the Portsmouth schedule. It is that of the "Ornithological and Zoological Society." It is very good in every way; and though we have given up noticing the schedules of the smaller shows, for from their immense number we could not act fairly to all, still we call attention to this one because the whole of the poultry cups are "point cups." For

instance, instead of a cup for the best pen of Brahmas, it is a cup for the greatest number of points in the Brahma classes. The table of points is not in the schedule, but we learn that a commendation counts one; high commendation, two; very high commendation, three; fourth prize, four; third prize, five; second prize, six; and first, seven. The object of the point cups we hear is "to give a reward to all those who otherwise only get commendations, the cups being generally taken by some few gentlemen possessing a few good pens and entering them at every show." We shall be curious to see how the system answers in the way of the number of entries. The judges are not announced, which we always consider a great mistake.

We have a strange Peacock come to us. It appeared one morning, and has become quite at home. It is not in good plumage, and looks as if it had been confined. Anyone having lost such a bird can send a description to us through the Editors, stating the locality where it was lost.

We are receiving much better accounts of the hatchings in various places. Some yards will be very late, but we think many are in the same boat. The accounts of hatchings are very different. We hear from Lincolnshire of one Oochin fancier who hatched in February thirty-four chickens from thirty-seven eggs, and all are doing well; while another Oochin fancier in Somersetshire only hatched in February and March about twenty-five chickens from 163 eggs. We believe a great deal depended this season on the condition and constitutions of the breeding pens.

At the late Maidstone Dog Show the new plan was tried of putting catalogues in the hands of all the Judges, and so they had no means of pretending to be ignorant as to the owners of the animals. We believe the system would work well with poultry exhibitions, and we should like to see it tried. It would anyhow stop all those unpleasant whispers which will get circulated of birds and numbers being known beforehand, and would at least enable all committees to announce their judges' names with impunity.

The Alexandra Palace Grand Chicken Show is arranged for October 14th, 16th, and 18th. We believe the schedule is in course of preparation, as is that of the Great Oxford Chicken Show. We believe both Secretaries—viz., Mr. W. J. Nicholls or Mr. P. H. Jones of the former, and Mr. J. King of the latter, will be glad to advance any breed by giving a class if a little help is provided in case of a loss. Consequently all admirers of the less cultivated breeds should lose no time in communicating with those gentlemen.

Mr. T. A. Dean's sale of adult Light Brahmas was not a very great success in the way of long prices. The fact is it was a bad time for such a sale. Many very good birds fetched only a few shillings, but the quality was sufficiently good to make us expect a good muster of valuable young birds at his coming chicken sale. "Young Hero" was bought in.

The next chapters of "Les Basses Cours d'Angleterre" will be on the yards of Mr. O. E. Cresswell of Bagshot, we hope with an illustration, and on some of the great eastern yards. They will recommence next month.

Those who want shade in the scorching suns of July and August in their poultry runs, should at once sow seeds of artichokes, sunflowers, and hollyhocks. The seeds had better be sown in some good soil and transplanted when sufficiently grown to where they are wanted to grow. The seeds of the sunflowers are very wholesome for the poultry and stimulate laying. We saw last year a bare run made quite ornamental with a grove of Jerusalem artichokes in the centre, and hollyhocks of all colours round them. If the birds are in the runs where their shade is wanted, the plants or seeds must be fenced round with wire until the plants are sufficiently strong and large to withstand the movements and scratching propensities of the birds.

All who are short of grass runs and can spare a few feet of garden ground should now also seeds of the Swede turnips or mangolds. It is marvellous how the birds enjoy the roots, and do not leave them alone until they have scooped out every morsel of fleshy matter, leaving only the bare skin or shell. These roots not only keep the birds in health by affording vegetable matter, but by continually keeping the birds occupied and busy. Mr. Burnell we know uses them extensively, and Mr. Norwood, the White-crested Black Poland breeder of Salisbury, sets aside annually a goodly piece of his garden for the production of these roots. We have the strongest belief in large quantities of vegetable produce for birds kept in confinement, and we would recommend plenty of lettuces being raised by those who have space for the birds in the hot summer months, for after the salads have been prepared for the house, all the outer leaves and plants which run to seed make capital green food for all birds.—*W.*

The degree of cold which a hen's egg can bear without losing its power of development has lately been investigated by M. Colasanti. Having first observed that salt water at ordi-

nary temperature did not affect the development of eggs, he buried some eggs in a freezing mixture of ice and ordinary salt. Of any three or four treated thus one or other always breaks its shell; and the contents both of these and of the unbroken ones were found solidly frozen. After remaining one or two hours in the mixture (the temperature of which quickly went down to -7° to -10° for 80 to 40 minutes, rising again to -4° , or -5° by the end of the second hour), the unbroken eggs were taken out, washed and dried, and placed in the hatching oven, having a temperature between 36° and 40° ; and after ten days they were examined. In every case a normal embryo was found to be developed, without the least trace of anomaly. They were in all respects like the normal embryos of eggs that had been placed in the hatching oven without previous exposure to cold. M. Colasanti remarks that the fact is in harmony with a large number of other natural history facts, which altogether show that the germs of organisms possess a considerably greater power of resistance than the completed organisms themselves.—(*English Mechanic*.)

"CLARISSA" wishes to know why the poultry she kills at home is hard although young, while that which she buys is tender?

The easiest answer we can give is, that very often the fowls are not killed till the company has arrived or expected. They are then still rigid from death, and nothing will overcome it. It may be difficult to find in a private house poultry as good as that to be bought in London, but there is no reason why the difference should be so great. As it is necessary chickens should be killed when they are fit, and before they get hard, there is no reason why there should not always be a couple of good chickens hanging in the larder of a house. They will keep three or four days in the summer, ten days or a fortnight in the winter. This has been often thought impossible, but it needs only a little management and the knowledge of how it is to be done. As a rule the chickens are spoiled not by the weather but by the food in the body, which ferments and causes corruption. The chickens should be cut off from food or water for twelve or fourteen hours before they are killed. They should be picked at once; a picked fowl keeps better and longer than one in its feathers. It should be hung in a cool place where there is a moderate draught, and kept there till it is quite limp, and it will then be quite tender to eat.

I am lately a resident in Essex. I keep poultry, and among other things I have Geese. How long do they sit? Does the period vary? Has the east wind anything to do with it? They say it has here, but I never heard it in Surrey.—DUNMOW.

POULTRY CLUBS.

In your Journal I see an article referring to the Leghorn Club, and advocating the formation of a national poultry club with many branches, each being a club for the fanciers of each variety of poultry. With the first idea I cordially agree, and shall be glad at any time to join a real national club, for I am certain it would be a very great advantage to the poultry world generally; but I fail to see what advantage there would be in having branches, and certainly it would entail much needless expense, for each would require its own machinery. I think when there is no national club it is a wise plan for us Leghorn fanciers to unite for a common object, and I am sure our action is by no means a foolish one, and the fanciers of other new breeds would find the benefits of similar action; but I am sure most of our members would be willing to merge into a national club, if such be formed, when our chief objects are attained—namely, the adoption of a standard and the obtaining of classes at the best shows. I shall be glad to hear why you think it would be better to have variety branches, as it might alter our mode of action if your plan is worthy of adoption.—EDWARD BROWN, 24, Gloucester Road, Newcastle-on-Tyne.

[We advocate the formation of clubs among the fanciers of the different varieties, because we feel sure that with one national club alone the benefit which they seek for would never arise. For example, were there a national club only and no Leghorn club, we feel quite certain that that breed would never have the justice done to it which its admirers now require. In the mass of other business of a national club, with breeders and exhibitors of more cultivated breeds clamouring for attention, the Leghorn would be less easily able to take its place in the fancy, which we believe it now will do. The branch clubs would be to promote the cultivation of their varieties and to induce societies to do their duty by their supporters. The national club, which would embrace all the members of the branch clubs, would afford opportunity for all fanciers to meet together once or twice a year and discuss any questions of importance to the fancy, such as wrong awards and wanton neglect on the part of secretaries and committees. Mr. Brown says, "when our chief objects are attained" we shall probably be most of us willing to merge into a national club. We think that he would never attain his objects unless he had his branch club; and

why should not Cochins or Dorkings, which we often find disgracefully used in schedules, be the means of gathering their admirers together for their further cultivation? It would certainly not cause either the national or the Leghorn Club "much needless expense," being simply for the admirers of these breeds, who would keep their clubs alive.—W.]

HENS AND CHICKENS.

WHEN your hens want to sit let them sit in the nests they lay in. This can be easily done by putting a piece of wood similar to the one that divides the nests at the end of the 80-inch piece, and making two holes through the lid, into which you can put two 2-inch nails to keep the board in its place. By this means the sitting hen will have plenty of light and air, and the other fowls will not be able to annoy her.

The largest profit with the least trouble is made with eggs. A good hen under ordinary circumstances will lay 180 eggs in a year. The best breeds are the Leghorns, Spangled Hamburgs, and Black Spanish. The Hamburg lays the largest number, but its eggs are small. The others lay fine large eggs, and two hundred per annum is not an enormous yield for one hen if properly housed and well fed in winter.

One bushel of Indian corn will feed one fowl of the last-mentioned breeds well for a year if it has a run where it can get grass and insects. If you do not want to keep any particular breed choose birds with large combs, black legs, white ears, colour perfectly black. Avoid yellow legs, red ears, and crooked breast bones. Take the feet in your hand, and if they feel stiff and hard reject the bird; they should feel soft and smooth. If the comb is not red examine it closely to see that there is no disease about it.

If you want chickens give the preference to the Light Brahmas. In choosing get plenty of Dorking blood in them, though when mixed slightly with the Cocker they are more vigorous than pure Dorkings. Always avoid yellow legs and crooked breasts. But the most profitable of all chicks are young Ducks. In ten weeks they are fit for the market, and should be killed at that age. They bring as high a price as a four or five-month chicken. You can also take them away from the hen as soon as hatched, and have her laying again five or six weeks sooner than with chickens. The best Duck for this process is the White Aylesbury; it grows quickly. The Roman Grey and Cayuga Black are good Ducks, but to kill before they shoot the second feather, give the preference to the Aylesbury.

Game hens in the second year are the best for sitting. The Brahmas often sit well. If you have any doubt about a hen sitting put dummies under her for two or three days with the end board up. This will make the hens that laid in the same nest find another. If you then find her bust feel hot to the hand take out the dummies and put the eggs under her, first marking them so as to detect any stray eggs that may be laid amongst them. Remove the end board every night and morning when you feed, and put it up again when the hen has returned to the nest. Never take her off; let her consult her own convenience in that respect and act accordingly. If you set a number of hens put two or three to sit at the same time. You can then if you have small clutches put two to one hen. Put the other hen under a crate, and she will forget the chicks in two or three days. Or, you can take a lamp into the pen after dark when your hens have been laying nine or ten days, and examine the eggs; take out all the bad ones and put all the good ones under two hens. Put fresh eggs under the third. The good eggs are easily distinguished from the bad by being opaque when held between the eye and the lamp, the bad ones being clear. Put the bad eggs in a cool place, and if they have not been set more than nine or ten days you can boil them hard for the chicks when they hatch. By this means you can almost invariably get good clutches.

If you keep only a small number of fowls the Black Red Games are good birds (if not mixed with Malay). They sit well, lay well, are good hardy fowls. If well managed one hen will hatch one clutch of Ducks early, one of chickens late, and lay over one hundred eggs in the year.

When you commence buy at once if you can all the fowls you want, or even more. Do not purchase a few now and again, as every time you add fresh ones the others are disturbed. By having a few extra you can remove some you do not like, and still have the desired number. Keep one cock to every ten or twelve hens. Set one about two or three years old, and have the other chickens. If your neighbours keep fowls close by, let your old cock be good and strong in order that he may be able to prevent depredators from gaining an entrance. If a strange cock should enter he will surely be followed by his hens, and these, by mixing with yours, will as surely stop them from laying.

In feeding the first consideration is grit. The best grit is smooth water-washed stones about the size of barleycorns. If your fowls are allowed to roam at will they can generally in summer get sufficient, but not always; and if many an un-

successful keeper of poultry would not open the gizzard of one of his fowls after killing he would find it filled with matted husks and the hard fibres of roots and grass, but no grit. Perhaps a few buttons, bits of bone or coal, that the hen may have picked up for want of something better to assist her digestion may be met with; but he should find the gizzard about one-third full of small stones. If he does not, then his fowls need grit. It is just as necessary to them as teeth to himself.

The best grain to feed with is Indian corn or maize. One bushel will feed any of our smaller breeds for a year without adding any other food than the fowl can pick up on a good grass run. Shorts are first-class food in summer, mixed stiff with curdled milk or water. Always give your fowls as much grain as they can eat before they go to roost. If you find them moped, stopping on the roost in the daytime and not generally inclined to move about, give them a few peas—say one feed instead of corn—give peas alone unmixed with anything else. If they cannot get sufficient insect food give lean raw meat. Liver or pluck cut up into small pieces will pay at any time by adding to the number of eggs. You should also change the food occasionally. Wheat makes a good change, barley also is very good; but for regular feeding none of them is equal to Indian corn. Always mix some of this latter with the other grains when introducing changes. Give plenty of good clear drinking water in shallow pans, so that the chicks cannot get drowned.

In making nests put in first a shovelful of ashes or dry sand mixed with one handful of powdered sulphur. Then make the nest with straw and put in a dummy. Every time a hen sits remove the straw and put in fresh.

The best food for your Ducks and chickens when hatched is hard-boiled eggs chopped fine and moistened for the Ducks. After the first day add a few crumbs of bread to the egg. You can then, as soon as they will eat it, feed your chickens with wheat and your Ducks with shorts mixed with water or curdled milk. When your Ducks are seven weeks old mix with their shorts grease or chandlers' waste (the refuse of rendered lard), and you will find your Ducks fat at ten weeks old. Pen them for the last three weeks, and give water only when you feed.

Twelve Ducks will eat in ten weeks ten eggs, 3 lbs. of wheat, 100 lbs. of fine shorts, and 15 lbs. of lard waste. The best time to hatch chickens is April if you intend keeping for two years, and June if only for one year. Generally speaking, it is best not to keep them over two years laying.—W. W. H.—(*Canada Farmer*.)

THE LANGUAGE OF FOWLS.

Is there anyone who keeps fowls who has not noticed the great variety of sounds they make expressive of their feelings? It amounts almost if not quite to a language, probably more so than any other creature except man.

Even the modulation of noises made is very significant of meaning. First there is the piping of the little chick, calling for the care of its stately mother, who continually keeps answering with the assuring "Cluck, cluck!" As the chick grows a little older the piping is succeeded by a chirrup; then there is the trilling song of pleasure they make under their mother's wings when sitting down to rest; but just put your hand under the mother and pull out one of the little chicks, and hear its sharp cry of terror mingled with the defiance and abuse of its parent.

Throw a large beetle into their coop, and hear the consternation uttered by all the little family mingled with the warning voice of their mother. Now throw some dainty bit, and hear how soon her voice changes; her children understand there is something extra nice for them by her peculiar declamation, which brings in all stragglers in a great hurry. How well the little things comprehend the peculiar cry of their mother in case of danger, such as the approach of cats or hawks; or let a little straggling wail peep into the coop, and hear her timely warning to keep out.

In the course of time the mother tires of her charge and gives her children the slip, who express their forlorn feelings by a whining cry while hunting around for her.

In due time the young gentleman chick tries his voice at a crow. Could anyone ever believe that such stammering, such straining and croaking, would ever reach that clear rich song that has been celebrated in the history and poetry of all the great nations of the earth, and caused so many great "awakenings" in all classes of society?

Soon he begins to feel gallant, and if by chance he finds some rare bit he calls some of his nearest belles to partake of it, but they frequently arrive just in time to see him bolt it himself.

One of the next musical strains is the prating of pullets when they feel happy and well; then there is the alarm when startled by anything strange, also the shrill cry raised by all should a hawk appear. Another peculiar noise is made when you approach their roosts at night, uttered and answered all round—a slight trilling noise, as much as to say, "Hark! What's that strange noise?" which is deepened into a sharp "Tut tut" if danger is suspected, and into a shrill piercing cry if taken from their

perches, evidently suspecting that you may be thinking of chicken pot-pie.

I think there is no domestic animal that has a less offensive voice than the domestic fowl. It will compare favourably with the voice of the Duck, Turkey, Guinea Fowl, Goose, or Pea Fowl. Their loudest noise has a charm for many a fancier when they set up the cry, "Come! Come! Come! Take the egg."—H. HALLES.—(*The American Pet-Stock Bulletin*.)

UTILISING QUEEN CELLS.

"Bees swarming!" is a cry we may fairly expect soon to hear, in spite of the bitterly cold easterly wind now blowing, and in anticipation of that happy time arriving I should like to say a few words on the utilisation of queen cells.

On the issue of a swarm, whether natural or artificial, the parent stock is of course left queenless; in the former case it remains so generally about a week, and when the swarm is a forced one ten to sixteen days. The young queen when hatched seldom becomes fertilised under eight days, then one or two more days elapse before eggs are deposited, and another twenty-one days before young bees emerge from their cell-cradles.

During the first three weeks young bees are hatching in full numbers from the eggs of the old queen, and then we have from seventeen to twenty-six days, when the bees die fast from hard work, and none hatch to replace them, and in cases where second swarms issue this evil is aggravated by the number of days that elapse between the birth of the first and second queens. A little consideration will at once convince anyone that to abridge this lost time will be a gain of many thousand workers to carry on the business of the stock. The skilful apiarian has long ago realised this, and practised several methods to economise time, some of which I will now explain.

We will first consider what happens consequent on a natural swarm. The life of the colony depends on the raising of a queen and her becoming fertile; the bees, instructed by Providence, foresee this, and generally have queen cells seven or eight days advanced to maturity; the number of these vary from one only to twelve or even twenty. The first-born queen will, guided by instinct, destroy her unborn sisters unless prevented. When the swarm has been forced by driving or other means the bees have of course not foreseen their loss, and have to build queen cells from the foundation, so that it will be a few more days than in the case of the natural swarm before their young queen can gladden the hearts of her faithful subjects. When the bees are in straw skeps manipulating with queen cells is awkward work, and the inexperienced hand will most probably fail, but with frame hives the case becomes much easier. Probably the best method to pursue where a man is the owner of a plurality of hives is to artificially swarm one eight or ten days in advance of the others; the first will start queen cells, and, their number being noted, all but one may be cut out and grafted, one in each of the later-swarmed hives. Great care must be taken not to bruise the queen cells or get them chilled, or their inmates will die. They should be cut out with a triangular piece of comb attached and inserted in an aperture of like shape in the comb of the foster stock, of course after the swarm has left it.

A much preferable and more scientific manner of proceeding is by means of what is termed nucleus queen-raising. To fully describe this would occupy more space than can be spared here. As there are several methods, each having their advantages, so I will be content to describe one. The desideratum is to have always on hand a fertilised queen ready to occupy any vacant throne at any moment. The nucleus hive is made of wood measuring inside 8½ inches wide, 9 inches deep, and 7½ inches from front to rear—just sufficient capacity to hold two small frames, one of which must have fitted in it comb containing honey, and the other comb containing brood and eggs, to which must be added enough bees to well cover at least one comb. It is advisable to confine the bees for a day or two within the nucleus hive, when they will form queen cells, which having been allowed to mature, as many more nuclei should be formed, and a queen cell be grafted into each. The bees will take care of them, and when the young queens hatch they may be left in the nucleus hives to get fertilised, which having happened they are ready to supply any swarmed hive requiring them, the usual precautions being taken to prevent murder.

Queen-raising I think is one of the most interesting operations of scientific bee-keeping. I enjoy it immensely, and hope to raise many during the next few weeks. The cold up to this time has kept my nucleus hives almost idle. The last week in April I had three in work—but alas! after a bitter cold night I found the bees of two frozen stiff, and of course the royal pupae dead; the third, however, hatched its queen on the first day of May, and is ready for any vacant throne.

I may here say that several readers of the *Journal of Horticulture* have during the last six or eight months written to me desiring permission to see my apiary; reluctantly I was compelled to refuse, as business detained me from home during the short daytime. Longer and warmer evenings have now arrived,

and I shall be pleased to show and explain anything after 6 P.M. any evening, but an appointment is desirable; and if any bee-keepers will favour me with a visit on the last Saturday of this month at 8 P.M. I will endeavour to show the *modus operandi* of making artificial swarms, queen-raising, &c.; of course, weather permitting.—JOHN HUNTER, 5, Eaton Place, Ealing.

HOW TO SECURE PREMIUM HONEY.

DR. P. A. BAKER, in the "Bee-keeper's Magazine," publishes a plan to secure the largest quantity and the best honey, which is well worthy of trial. The plan is simply to keep a very strong colony queenless during the greatest flow of honey. All apianians know that a virgin swarm will work with more energy in building comb and storing honey than one with a full supply. It is not uncommon for strong families, with everything needful for storing honey in surplus boxes, to loaf about the hive until a few empty frames are given between the full ones, when they will soon be filled; but being in the queen's chamber she immediately performs her maternal duty, and you get no honey. The law is immutable in their allowing no empty space between broad combs, and the law impelling the bees to fill the space with comb acts with like force in indicating to the queen her duty. By virtue of cause and effect, if the entire hive is made into space it is but fulfilling that law for the bees to promptly fill it with comb and honey if, perchance, it is in abundant supply; but madame queen being present, we must allow a considerable force to assist in attentions to her royalty. Dethrone her and supply the colony with material to make a new one, and yet allow none to mature for a period, and we shall have our boxes filled with the beautiful nectar. The operation is to put two large swarms, without queens or comb, into a hive filled with empty sectional frames or honey boxes, and give one broad comb at one end of the hive, and before the new queen is hatched remove the comb and give them another. When the second has become fertile, the greatest flow of honey being over, remove the honey frames or boxes and fill the hive with combs or empty frames, as the fall season for honey may indicate. The queens and brood combs can be utilised to advantage, which any intelligent apianian will understand.

OUR LETTER BOX.

BOOKS (U. U.).—Our "Foultry Book for the Many" will suit you. You can have it post free if you enclose seven postage stamps with your address.

FOWL'S TIGER SWOLLEN (J. O. W.).—We do not know the disease. We think it must be the result of an accident, or from the attack of some animal, such as a hedgehog. The hedgehog is very fond of chickens, and will attack them night after night.

HOUDAN HEN'S ABDOMEN BEARING DOWN (W. H. W.).—Old hens are subject to the bearing-down you mention. The upright position is common to pullets when laying their first eggs. They are then egg-bound, relief is easy, and they recover. Not so with the old birds: either they are ruptured, and consequently incurable, or they are injured, and if old are hardly worth keeping till they recover. The number of cocks running with hens should be much diminished at this time of year as compared with winter. Inattention to this fatally injures many hens and pullets.

GOOSE EGGS (Alicia).—If the eggs were good when put under the hens there is no doubt they will hatch them. There is sometimes uncertainty as to date, but we know they will hatch in spite of the east wind. You must be careful to keep them well wetted; the Goose returns to her eggs dripping with water. If the eggs be kept dry every gosling will die in its shell.

INSECTS ON CHICKENS (Idem).—We cannot understand about the chickens, but we should not be anxious to keep any suffering from hereditary vermin. Such are sure to die when feathering. They are literally worried to death. Try the change of air, but as soon as you discover any signs of the visitation get rid of them.

HIVES (Youthful Amateur).—Mr. Pettigrew will tell you his hive is the best; other people will tell you differently. We have no "best" hive in use; but find every hive good in its way, and make the "best" of it. The question of best depends upon a variety of circumstances, such as climate, pasturage, strength of swarms, object in view in bee-keeping. Your hive ought to do well enough. As to your bees not taking to the bell-glass, that is because they have no need for it yet. Wait till honey abounds, and they will take to it fast enough if kept warm and it has a nice piece of comb in it. Write to Mr. Pettigrew, Sale, Manchester, for his book.

DRIVING BEES (Glastonbury).—The fact that drones made their appearance on the 1st of April (this very late unfavourable season), and a queen being frequently seen at the entrance of your hive since, indicate that the bees lost their old queen in April and reared a young one to take her place. Fertile queens never come out or expose themselves except in the act of swarming. The queen which was seen on the flight-board was either the old one mercifully treated after being dethroned, or her successor going out to meet the drones. If we are right your hive was not in a proper condition for swarming, the young queen not having commenced laying, and it is just possible that she may be unfertilised. Before artificial swarming be again attempted young brood should be seen in the combs. The tapping or drumming spoken of must have been too gentle, for if it had been sufficiently heavy almost all the bees would have been driven up in less than half an hour. Why the bees were slaughtered on their return we cannot imagine, for we have never known returning swarms rejected or killed by the mother hive if they returned within twenty-four hours of the time of swarming. As already stated, we think the hive was not in proper condition for swarming, and probably you will be more dexterous and succeed better next time you attempt artificial swarming. By drumming all the bees out of the heavy box into an empty one not smeared with sugar at all, and then examining the combs

for eggs and brood, you would ascertain if our surmises are correct. The combs could be examined without drumming the bees out, and if brood in all stages be found in them you may again swarm the bees by drumming for about five minutes. If the swarm returns you may be quite certain that the queen has not been taken with it. If you drum all the bees out and they remain in the empty hive they have a queen, and if the combs be without brood you could take honey, and put the bees into any kind of hive you prefer.

INCREASING STOCKS OF BEES (J. O. W.).—As you are afraid you will not have time to watch for your bees swarming you should make yourself acquainted with the simple process of artificial swarming, and then you will be able to swarm your bees at your convenience, and as soon as your hives are ready for swarming. At any time between 4 A.M. and 8 P.M. a hive may be easily swarmed in fifteen minutes. An expert can do it in seven minutes. If you expose your hives in which bees have died during the winter your neighbours' swarms may be enticed to settle in them instead of your own. Your bees may swarm and be lost, even though hives of empty combs be placed in the same garden. If some of the combs are more than one year old we advise you to melt them for wax instead of using them for swarms. The combs of last year's swarms if sweet would greatly help swarms of this year.

HIVES (A Gardener).—We are pleased to hear you have been so far successful in your first efforts in bee-keeping. You are like many others; wanting to buy large hives, but do not know where to get them. We regret that our hive merchants do not advertise their goods as they ought. Mr. Yates of 16 and 18, Old Millgate, Manchester, supplies us with large hives; and it is believed Mr. J. Lee, Windlesham, Bagshot, has some on sale.

METEOROLOGICAL OBSERVATIONS.

CAMPDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain.
1876.	Barom. at Sea and Bar. Level.	Hygromet- er.		Direction of Wind.	Temp. of Air at 1 foot of Soil.	Shade Tem- perature.		Radiation Tem- perature.			
May.		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
We. 10	30.155	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Th. 11	30.153	51.1	44.0	N.E.	49.5	53.8	53.4	107.5	51.7	—	
Fri. 12	30.174	56.9	49.3	N.E.	49.0	54.5	53.1	116.5	53.6	—	
Sat. 13	30.174	49.5	44.4	N.	49.7	53.5	53.0	110.3	53.3	—	
Sun. 14	30.330	49.3	43.3	N.	49.7	53.5	52.9	110.3	53.6	—	
Mon. 15	30.085	51.0	44.4	N.	49.1	50.4	55.5	107.4	57.7	—	
Tu. 16	30.085	48.7	45.5	N.	50.0	51.3	48.0	111.9	51.4	—	
Wed. 17	30.149	51.0	47.3	N.N.E.	50.1	53.1	48.9	106.8	53.7	—	
Means	30.187	50.5	45.3		49.5	50.7	53.5	110.0	53.1	—	

REMARKS.

10th.—Rather cloudy morning; bright day throughout, but not warm; cold at night.
 11th.—Traces of frost early, but sunny warm morning, and very fine day; brilliant night.
 12th.—Overcast morning; fine afterwards.
 13th.—Cold and dull; fine evening.
 14th.—Sharp frost early; very pleasant morning and fine day; a few spots of rain in the evening, but not measurable.
 15th.—Dull, with occasional sunshine; fine night.
 16th.—Overcast, except for short intervals; clearer in evening.
 The week has been very much like the previous one: dry atmosphere, no rain, strong sun, cold wind, and occasional night frosts.—G. J. SYMONS.

COVENT GARDEN MARKET.—MAY 17.

BUSINESS is steadily improving, and the supply of all things is well up to the demand. The late cold nights have very much checked the growth of English Asparagus, the want of which has been removed by heavy importations from France arriving in very fine condition.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	6	0	0	Mulberries.....	lb.	0	6	0
Apricots.....	dozen	0	0	0	Nectarines.....	dozen	6	0	0
Cherries.....	lb.	0	0	0	Oranges.....	100	6	12	6
Chestnuts.....	bushel	0	0	0	Peaches.....	dozen	0	0	0
Currants.....	1	0	0	0	Pears, kitchen.....	dozen	0	0	0
Black.....	dozen	0	0	0	dessert.....	dozen	0	0	0
Figs.....	dozen	0	0	0	Pine Apples.....	lb.	1	0	4
Filberts.....	lb.	0	0	0	Pineapples.....	1	0	0	0
Cobs.....	lb.	9	1	0	Quinces.....	bushel	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	6	18	0	Strawberries.....	oz.	0	2	10
Lemons.....	100	6	12	0	Walnuts.....	bushel	4	0	10
Melons.....	each	6	0	0	ditto.....	100	1	6	2

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	4	0	6	Leeks.....	bunch	0	4	0
Asparagus.....	100	8	10	0	Mushrooms.....	pottle	1	0	0
French.....	bundle	6	17	6	Mustard & Cress.....	panset	0	2	0
Beans, Kidney.....	100	1	0	2	Onions.....	bushel	0	0	0
Beetroot.....	dozen	0	0	0	Pickling.....	quart	0	0	0
Broccoli.....	bundle	0	2	1	Parsley.....	doz. bunches	2	0	4
Brussels Sprouts.....	1	0	0	0	Parsnips.....	dozen	0	0	0
Cabbage.....	dozen	1	0	2	Peas.....	quart	4	0	0
Carrots.....	bunch	4	0	8	Potatoes.....	bushel	2	6	6
Capicokes.....	100	1	6	2	Kidney.....	dc.	3	0	6
Cauliflower.....	dozen	1	0	4	New.....	lb.	0	0	0
Celery.....	bundle	1	0	0	Radishes.....	doz. bunches	1	0	1
Colewort.....	doz. bunches	3	4	0	Rhubarb.....	bundle	0	6	1
Cucumbers.....	each	4	1	6	Salsify.....	bundle	0	9	1
Endive.....	dozen	1	0	2	Scorzonera.....	bundle	1	0	0
Fennel.....	bunch	0	2	0	Seakale.....	basket	1	6	2
Garlic.....	lb.	0	6	0	Shallots.....	lb.	0	2	0
Herbs.....	bunch	0	0	0	Spinach.....	bushel	4	0	0
Horseradish.....	bundle	4	0	0	Tomatoes.....	dozen	0	0	0
Lettuce.....	dozen	0	6	1	Turnips.....	bunch	4	0	6
French Cabbage.....	1	6	2	6	Vegetable Marrows.....	0	6	0	0

WEEKLY CALENDAR.

Day of Month		Day of Week	MAY 25—31, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.		Day of Year.	
Day.		Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	m.	a.				
25	TH	Tiverton Show closes.			65.4	42.9	54.2	8	57	7	57	4	45	11	5	1	2	8	17	146
26	F	Queckett (Microscopical) Club at 8 P.M.			67.4	42.8	55.1	8	55	7	58	5	57	11	51	2	3	10	147	
27	S	Royal Botanic Society at 8.45 P.M.			68.5	44.7	56.6	8	54	7	59	7	24	morn.		3	8	8	148	
28	SUN	SUNDAY AFTER ASCENSION.			68.1	44.4	56.2	8	58	8	1	8	55	0	22	4	2	68	149	
29	M				67.5	44.1	55.8	8	52	8	2	11	28	0	42	5	2	48	150	
30	TU	Royal Aquarium—Summer Exhibition.			68.4	44.7	56.6	8	58	8	3	11	45	0	57	6	2	40	151	
31	W	Royal Botanic Society—Promenade at 8.30 P.M.			69.4	44.8	57.1	8	51	8	4	1	a 4	1	9	7	2	52	152	

From observations taken near London during forty-three years, the average day temperature of the week is 67.7°; and its night temperature 44.0°.

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CULTURE OF ROSES IN POTS.

PERHAPS there are no gardens of any pretensions in Britain but contain Roses. It is pleasant to think about them, and more pleasant still to commit one's thoughts to paper and to know that they will be printed and carefully read by a large number of those who love Roses. Mr. Camm and many more correspondents discourse most pleasantly about Roses for the flower garden and Roses for exhibition, Roses on their own roots, Roses on Briars, and Roses on the Manetti. I have read very nearly all that has been written about them, and though there has been some difference of opinion the differences have always been pleasantly expressed, and in all things there is a greater desire to arrive at the truth than to upset the arguments of an opponent. It is very pleasant too to stand by and admire the beautifully arranged boxes of cut Roses set up in their groundwork of fresh green moss, the united skill of amateur and professional gardeners combined with boundless enthusiasm. And many eager admirers resolve that they will have just such Roses in their own gardens next year.

In our uncertain climate and with unsuitable soil Rose culture out of doors is not without its difficulties, and this year, with a keen east wind blowing for three weeks or a month about the beginning of May, the Rose leaves, which have a beauty all their own, look very deplorable, and the show for flowers is anything but promising. We may soon have favourable weather; warm showers and western winds would work a marvellous transformation in the Rose garden. In the meantime those who grow Roses in pots are independent of any weather, and what a splendid object a well-grown pot Rose is! the leaves full-sized, healthy, and free from any trace of insect pests. But of course it is not given to ordinary mortals to possess such plants as are annually exhibited by Mr. Charles Turner of Slough and Messrs. Paul & Sons of the Old Nurseries, Cheshunt; their Roses are grown for exhibition, and they do show right well what Roses may become under skilful culture. At Loxford Hall, where my lot is cast, it is trying work to grow Roses out of doors. They have been tried on all sorts of stocks, including their own; the ground has been trenched and manured, loam has been brought a long distance for them, and still they refuse after a time to do well. In pot culture it is different. With us the Rose does well in pots, and we can meet other growers on more equal terms.

I am quite ready to acknowledge the magnificent appearance of the large specimens one sees at exhibitions, but they are not more beautiful than nice healthy young specimens grown in 8-inch pots: this last may be in the possession of the humblest owner of a greenhouse, and may be cultivated successfully by those who have not had the chance of a professional training. The first thing is to obtain the plants, and they are certainly cheap enough. It says a great deal for the skill and enterprise

of British nurserymen to tell that all the newest and best Roses can be bought from them, healthy plants in 5-inch pots, for the small sum of 8s. each. They are worked on the Manetti stock in forcing houses early in the year, and are in fine order by the first week in May. Well, then, the plants may be obtained from any respectable nurseryman at once. By this time the pots are well filled with roots; if they are in 5-inch pots let them be potted into well-drained 7-inch pots.

Next in order is the potting material: its main constituent should be the top spit of an old pasture, and it ought to be taken from a clay land, and should be cut and placed on a heap at least three months before using it; to this add about one-sixth part of leaf mould and a fourth part of decayed manure; if convenient add an 8-inch potful of crushed bones to each barrowload, and a little sand to keep the compost open. In potting see that the compost does not get mixed with the drainage; this is easily prevented by placing some clean fibre over it first. The plants should be quite moist at the roots before potting them, and they may be dewed overhead with the syringe to prevent them from flagging. It is not likely they will flag if the operation of potting is carefully performed. I rather dew overhead than water at the roots for the first day or two. As a rule the plants will not suffer for at least twenty-four hours after potting, when water may be applied to the roots through the rose of a fine watering pot. After the end of May the plants are quite as well out of doors as inside, except Tea Roses, these are best kept in well-ventilated glass houses all the year round.

The principal enemies of pot Roses are mildew and green fly. Orange fungus I had but once on a few plants that were bought-in from the nursery. As soon as it was perceived I had the affected parts cut out with a sharp knife and the whole lot of the plants dusted with flowers of sulphur. This was just before the fall of the leaves; after they were all removed the plants were placed in a house where they could be kept dry, and this pest has not been seen again. Mildew is also destroyed by dusting with sulphur; and green fly, when the plants are out of doors, by laying them on their sides and syringing the leaves with soapy water to which a little tobacco liquid has been added.

The plants should not remain out of doors in a wet district after the end of September; here they remain to the end of October, and do not receive any injury. The pots may be placed close together in a cool house where air is freely admitted, or if this is not available they may be placed in an open shed. Those plants that it is intended to force early should be pruned as soon as the leaves fall, and I always take care that before pruning them they are dry at the roots; if so, they will not bleed. The first lot may be started early in December, beginning with a night temperature of 45° and not rising higher than this until the buds are well started. The plants ought to be quite close to the glass, and the temperature may rise after the leaves are formed to 55° or 60° gradually, say at the rate of 2° or 3° more each week.

The night temperature should not be higher than 60°. Roses that are produced very early in the year in a high temperature are not of good quality, the petals are usually very thin and deficient in colour. When the young growths have advanced a few inches if they are too thickly placed they may be thinned out, as crowded wood tends to produce small leaves and proportionately sized flowers.

If the plants are in vigorous growth and the flower buds are formed, manure water should be applied to them. Cow manure soaked in water and the water allowed to stand until it is clear, is very good, but it must not be too strong; apply it weak and often. A little guano or blood manure may be sprinkled on the surface of the soil, the waterings will wash it in. Manure water is excellent for promoting healthy growth, which results in a deeper colour to both foliage and flowers. Many varieties do not require flower-sticks, others do. Osiers are as neat as anything, and they ought to be cut and sufficiently dried so that they will not grow when the ends are inserted in the pot.

In all probability green fly will appear on the leaves, but this must be destroyed at once by fumigation. Mildew must also be watched for, and the affected parts dusted with sulphur. It is also very desirable to dew the plants overhead with a fine syringe night and morning. If the tiny dewdrops hang like beads to the edges of the leaves in the morning it is a sign that the moisture in the atmosphere is sufficient, and the plants will be sure to thrive.

Lists of Roses are so often given that it is almost unnecessary for me to give one, and the readers of the Journal will no doubt look out for those sorts that are in the prize lists. The Bourbon and Hybrid China Roses are not much grown in pots now. Charles Lawson may yet be seen in collections, but Coupe d'Hébé and Paul Ricaut that used to be much grown are thrown in the shade by the Teas and Hybrid Perpetuals. A few of the best forcing Roses are, in Teas—Adam, Alba roses, Belle Lyonnaise, Cheshunt Hybrid, Devonians, Homère, La Boule d'Or, Madame Falcot, Madame Jules Margottin, Madame Willermos, Maréchal Niel, Marie Van Houtte, Niphetos, President, Safrano, Souvenir d'un Ami, Viscomtesse de Cazes. The best Hybrid Perpetuals are Alfred Colomb, Anna Alexiaff, Beauty of Waltham, Bessie Johnson, Coquette des Blanchés, Countess of Oxford, Duke of Edinburgh, Etienne Levet, Général Jacqueminot, John Hopper, Jules Margottin, La France, Madame la Baronne de Rothschild, Madame Victor Verdier, Madame Eugénie Verdier, Prince Camille de Rohan, Paul Verdier, Princess Beatrice, Star of Waltham, Victor Verdier, Princess Christian, and Marquise de Mortemart.—J. DOUGLAS.

SUMMER PRUNING OF FRUIT TREES.

PEAR, APPLE, CHERRY, PLUM.

THE summer-pruning of fruit trees when well and timely done promotes health, vigour, and fertility—it maintains a just balance between wood growth and fruit growth, promoting yet restricting such growth in the best and highest degree. It prevents waste of vigour, devoting the precious sap out of which every part of the tree is formed—stem, leaves, buds, blossom, fruit—to the formation of a wood growth short-jointed, sturdy, and robust, bristling with blossom buds. Thus the growth is turned to its legitimate purpose, the production of fruit of the highest excellence in the greatest possible abundance in a given space. How is this done? I have before now tried to explain the process, but the inquiries of "F. J." convince me that I must be more explicit.

Let us begin at the beginning. All fruit trees have branches; let us take one of them and explain its treatment, and the lesson will be applicable to the entire tree of whatever form it may be. Now the branch has two distinct growths, the main or leading shoot forming the branch itself, and the lateral or side shoots forming the spurs. The annual elongation of the leading shoot should not exceed 18 inches nor be much under a foot according to the habit of the tree, very robust growth reaching the maximum, slender growth being confined to the minimum, or even within its limit. Neither of these lengths consist of one clean shoot but of parts of two growths. The first part or spring growth being pruned or pinched off at 6 or 9 inches; and the second or midsummer growth, left to grow unchecked till the beginning of September, is then twisted at a point slightly beyond the prescribed length, and the end left attached to the branch and hanging downwards till it is removed in the winter pruning.

What is our object in this part of the process? Just this—

to induce a prompt formation and an even distribution of lateral growth or side shoots along the entire length of the branch, to which end we pinch off the tip of the spring shoot, and so checking the upward flow of sap we divert it into other channels, as is shown by the increasing size of each leaf and the lateral bud at its base which so promptly follows the pinching. But we do more than this, for we gain at least a year in every season of growth, no mean result of our manipulation being that we induce the tree to do the work of two seasons in one; and in the treatment of young trees we may go even farther than this, and claim to effect the work of several seasons in one by the rapid formation of fruiting buds which we induce.

In our treatment of the side shoots we proceed upon the same principle, only with this advantage—that as each extension is limited to about an inch, often less, we are enabled to effect a little more by proceeding in this way. When the shoots are long enough to have become somewhat stout and stable at the base they are shortened to one or two eyes, which in a very favourable season push into growth so promptly that the second growth may also be pinched in a similar manner, and then the third shoots are left like the leading shoot till September, and twisted downwards near the base.

There are two points of importance here to which I wish to draw especial attention. First, the young shoots are not pinched till they are tolerably stout at the base, hasty and indiscriminate pinching inducing a crowded, weakly, barren growth, and totally defeating the object in view; but then I much fear that those who do their work in such a heedless fashion are a sort of purblind folk with no particular end or aim in view; they have been told that summer pinching is good for the trees, and so they pinch and pinch, but injuriously.

The other point is this—whether the second growth may be pinched or left to grow unchecked till September, when it is twisted downwards, must depend entirely upon the season itself. With a very forward spring a third shoot becomes really possible, and should certainly be had; but in a late season like the present it will be much wiser to rest content with two distinct growths, pruning the first and twisting the second, for if a third growth is encouraged this year the result will probably be an abortive crop of weakly unripe shoots which with the wood from which they spring would have to be pruned entirely away, and thus instead of sturdy well-ripened spurs bristling with plump buds, we should have a lot of miserable stumps and destroy the work of an entire season.

These hints apply very generally and with considerable force to the fruits enumerated at the head of this paper. They should, however, be regarded as elastic, exceptional cases so frequently arising which must be treated solely upon their own merits. The work is an interesting and withal a profitable one, and I am obliged to "F. J." for the opportunity he has afforded me of entering more fully into its details.—EDWARD LUCKHURST.

THE METROPOLITAN FLORAL SOCIETY.

As I have been asked many questions relative to this Society I may perhaps, as having been its Secretary during the few years of its brief existence, interest not only those who have asked me about it, but others also, if I give a short account of this latest and probably last attempt to encourage the growth of florists' flowers in and around the metropolis.

The Society was founded in 1870, and had for its object the encouragement of those flowers popularly known as florists' flowers—the Pansy, Tulip, Anemone, Pink, Carnation, Pinks, Gladiolus, Hollyhock, and Ranunculus. Roses were excluded, as it was considered to be so popular, so much a flower *en generis*, that it was well able to stand alone, receiving plenty of encouragement, whereas the others were simply excluded except from a few prizes at the Royal Horticultural Society. It was not intended from the very first to hold separate or distinct shows—that was felt to be impossible, but to avail ourselves of the exhibitions already existing, and to offer suitable prizes at the Royal Horticultural Society and Crystal Palace, while it was thought possible to induce the Directors of the latter place to revive their autumn show if we gave a considerable sum. Circulars were drawn up and an influential committee appointed—by influential I mean men interested in flowers and anxious to further our objects. We received in subscriptions from forty-nine persons the sum of £69 14s., but of these forty-nine persons there were only twenty who

were not exhibitors. As the Society was floated in the summer we negotiated with the Crystal Palace for the revival of their autumn show; they gave £100, and we issued a schedule of £168 in prizes. This brought together probably the finest show of Dahlias ever seen in London; but it was clear we were largely drawing on the north of England for exhibits, for the names of May, Edwards, Stuart & Mein, and others figured in our list of exhibitors. The following year we offered prizes for Auriculas, Pansies, Tulips, Ranunculuses, Pinks, Picotees, and Carnations, but in no instance save the first did we have more than two exhibitors. Our autumn show was again held at the Crystal Palace, but instead of £100 the Company gave but £75, the other £25 being allocated to table decorations, which certainly did not fall within our province. The third year somewhat varied the tale; our subscribers were increased in number to seventy-three, but the autumn show at the Palace was combined with fruit—outside our original intentions, but we could not hold it on any other terms.

In the fourth year, 1873, a great change took place. The Crystal Palace Company said the autumn show did not pay and abandoned it, substituting for it afterwards a fruit show in September. In 1874 arrangements had been made with the Alexandra Park Company to hold it there, when the disastrous fire occurred. An attempt was made to hold it at the Surrey Gardens, the old home of florists' flowers, but I discovered just in the nick of time that it was all a sham, or we should have had a complete *fiasco*. Last year, which ends "this strange eventful history," prizes were offered for Auriculas, Carnations, and Picotees at South Kensington, and our autumn show was held at the Alexandra Palace; but on attempting to negotiate the matter for this year I was informed that it did not pay, and so, as no other resource was open to us, we were obliged to abandon it; and although the Society still exists, yet its operations are nil. Nor do I wonder at it. I do not, in fact, know how we are to get up an autumn exhibition. Many of those who exhibited with us at first have given it up; and even since last year Mr. Walker of Thame tells me he has given up Dahlia exhibiting, and Mr. Morgan, a large amateur exhibitor, has also abandoned it. There remains now but one large exhibitor of Dahlias amongst nurserymen, Mr. Keynes of Salisbury, and I fancy from what he said that he will soon abandon it.

Such is my story, and now let me state what have been the results as far as the bringing-forward of fresh exhibitors is concerned. When we commenced in 1870 we had five exhibitors in Auriculas—Mr. Turner, Mr. James, Mr. Little, Mr. Butcher, and myself. Last year we had four; Mr. Little and Mr. Butcher (since dead) had retired, and Mr. Douglas had come forward and taken a prominent place. No increase had taken place in Carnations and Picotees: here again Mr. Douglas had come forward, but Mr. Pizzey and Mr. Norman had retired. In *Gladiolus* the same thing is to be said—three or four exhibitors. Hence I cannot but feel that we have signally failed in our attempts to bring forward fresh blood, and that some insuperable obstacle exists in the south against the cultivation of these charming flowers.

I know in all these matters much depends on the Secretary, and it is possible that I may be in some degree the cause of the failure. To me, however, it has been no failure. It has brought me more closely into contact with lovers of flowers of all degrees, and it has enhanced both my own pleasure and the opinion I have ever held of the craft. It has stirred me up to more earnest attempts in the growth of two of my favourite flowers, the Auricula and the *Gladiolus*; and I shall never forget the kindly feeling and courtesy which has been accorded to me by so many while holding the office of Secretary of the Metropolitan Floral Society.—D., Deal.

PINCHING CURRANT SHOOTS.

LAST year about this time, or rather later, I pinched-back to two leaves or so all the young growth on my Red Currant tree. A friend witnessing the performance exclaimed, "Now you will not have a Currant, the sun will scorch the fruit quite up. Nature has provided the leaves," &c. Well, he followed his plan of leaving all the growth on, and of course I could not change mine. The result was that his ripe fruit was invisible—did not, I believe, furnish two tarts; his bushes were twice as many as mine, and the show of young fruit proportionate. My very large crop ripened splendidly, very long clusters, and each Currant very large. I am afraid to pinch all back this year, as the cold wind prevents a good number

of the blossom setting, and I conclude the profuse foliage acts as a shelter. I have, therefore, as yet only pinched-back the branchlets which appear to be growing in a rampant manner and sheltering nothing. Am I right? I have pinched-back the Gooseberry trees as the fruit is well set, and it is quite extraordinary how rapidly it swells since. The year before last I let Nature have its way, and only had a few miserable Gooseberries and Currants, although the show of blossom was enormous. Am I right in removing all Strawberry suckers now?—A CORRESPONDENT.

PROPOSED INTERNATIONAL HORTICULTURAL EXHIBITION.

It is proposed to hold another international horticultural exhibition in London similar to that which was held in 1866. These international exhibitions have now gone the round of almost all the nations of Europe, and in the ordinary course it comes again to the turn of Great Britain. A meeting with the view of carrying out this object was held at South Kensington on Wednesday week of some of the survivors of the Committee of 1866, and the general feeling was that an attempt should be made to hold an exhibition. The details, however, were not settled either as to time or place; but it was agreed that a sum of £15,000 or £16,000 would be needed.

We doubt very much whether it is prudent to agitate this question at present. The event cannot possibly come off before the next three years without interfering with other great exhibitions which are already fixed. Next year we have Amsterdam, in 1878 the very attractive quinquennial of Ghent, and a great effort is to be made in Paris in that year also; we cannot therefore expect to do anything before 1879, and any effort made now may cool down before the time arrives for carrying it out. Our last great international, which was the grandest thing of the kind ever attempted, was begun and ended in less than nine months, and its great success as an exhibition was due to the concentration of effort swiftly and energetically applied.

We should rejoice to see such another exhibition as that was in 1866, and we hope it may be repeated in 1879; but we also hope that an untimely beginning will not also prove an unfortunate ending.

EARLY STRAWBERRIES.

LAST Michaelmas I selected from the nursery bed one score each of the best plants of Keens' Seedling, President, and Dr. Hogg, and planted them in 6-inch pots, plunging the pots after planting up to the rim in a piece of land with a free exposure to sun, wind, and rain. I covered the ground with light manure, and they remained in this situation until the first week in February without further attention. I then removed them to the top shelves of my greenhouse. When they began to show signs of life I carefully mulched each pot with rich manure. Not a single plant in the whole lot was barren, but all threw up one or more flower trusses. When a sufficient number of berries had set I removed the surplus blooms, leaving from eight to twelve Strawberries on each plant.

During the first week in May I prepared a piece of ground in a sunny sheltered situation, by putting on the surface about 6 inches of manure, and placing on the manure 2 or 3 inches of soil. I then removed my plants from the greenhouse on to this bed, allowing to each plant about 1 square foot of space, and plunging the pots to the depth of the soil. Over the bed I have erected a framework to shelter the plants from frosts, and I cover at nights with mats, bags, &c., when the thermometer falls to 40°. In a few days I shall be able to gather ripe fruit. I tried a similar way with about half the number I had in the greenhouse last year, and found the quality superior to those I kept to ripen in the house, to say nothing about the much less trouble of watering.

By this plan I can obtain ripe fruit fully a month earlier than those grown in the open ground, as we never gather any before the last week in June. Those that were planted in the garden last autumn are showing signs of an abundant crop, and with fine weather most of them will soon be in full bloom. *La Grosse Sucrée* is the only sort I have in bloom yet, but Keens' Seedling, Princess Alice, and Refresher will be out in a few days. The weather has been very cold, but if fine weather follow from this date (May 15th) I do not think they will be any worse for it. We have had during the present

month 5°, 7°, 10°, and one night my thermometer registered 12° of frost.—WM. LOVELL.

BELVOIR CASTLE.—No. 1.

THE SEAT OF THE DUKE OF BUTLAND.

THIS princely residence stands on the brow of a lofty hill, surrounded by a vast expanse of level country. It is seven miles from Grantham, and four and a half miles from Bottesford, where there is a station on the Great Northern Railway. The Castle was founded by Robert de Todeni, a Norman noble, standard-bearer to William the Conqueror, who gave him with many other lordships that of Belvoir. In the reign of Henry VIII. these estates passed by marriage into the family of Mannors, who have held them ever since. It would hardly further the interests of horticulture to trace in detail the various mutations that Belvoir Castle underwent before the erection of the present stately edifice. In the feudal times, in the Wars of the Roses, and in the troubled times of Charles I., it was frequently garrisoned, its commanding military position naturally rendering it a station of great importance. At the commencement of the present century successive attempts at modernising had nearly reduced the style and character of the Castle to that of an ordinary hall. When the father of the present noble Duke attained his majority one of his first objects was the rebuilding of the castle of his ancestors, or rather restoring it to its appropriate character. At an outlay of £200,000 this gigantic work had nearly been completed in 1816, when, on the 26th of October in that year, a fire broke out, which re-

dimens of *Magnolia grandiflora*; *Chimonanthus fragrans*, a lovely climber with fragrant flowers; *Lonicera fragrantissima*; double Chinese Peach, which at the time of my visit (April 19th) was covered with its charming flowers; *Foraythia suspensa*, *Spiraea pruniflora flore-plena*, and other fine wall plants.

But it was the spring flowers I more especially went to Belvoir to behold, and therefore we will leave these elevated positions and hasten away to what is called the Castle Garden. It is not often the lot of ordinary mortals to behold such an earthly paradise after a spell of wintery weather equal to what we had the week before Easter. Only five or six days before I saw this blaze of beauty the flowers and flower beds were buried 14 inches deep in snow, and the remaining snow-drifts in many parts of the grounds told their own tale. Besides the fall of snow there had been a stinging frost of 10°. Yet notwithstanding the heavy snow and biting frost, the spring flowers were blooming as fresh and beautiful as if there had been nothing but sunshine for many a day previous. From what Mr. Ingram had stated in a note a few days before my visit I expected to find the flower gardens a complete wreck, but such was not the case. These favourite pets of Mr. Ingram appear to rise superior to all vicissitudes of weather, and in spite of frost, snow, or rain, the plants grow and bloom with the utmost freedom.

For broad and general effect Mr. Ingram depends on the simplest materials. The generality of the plants employed are such as will flourish by the side of any country cottage. Arabis and Aubrietia, Wallflowers, Oxlips, and Pansies are grown in large quantities, and *Myosotis dissitiflora* stands

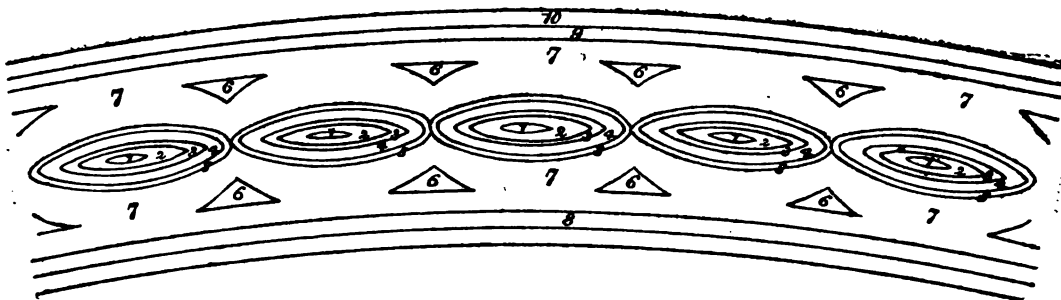


Fig. 109.

1, *Erica carnea*.
2, *Arabis albidia*.

3, *Aubrietia*.
4, *Golden Pyrethrum*.

5, *Erica carnea*.
6, *Golden Thyme*.

7, *Aubrietia*.
8, *Oxlips*.

9, *Bellis (Daisy) ananabolia*.
10, *Sedum acre aurea*.

duced the magnificent structure to a blackened ruin. Portions, however, of the Castle escaped, as the south-west and the south-east fronts, and the beautiful chapel. At the time of this conflagration the Castle contained collections of works of art and vertu that could scarcely be surpassed by any private mansion in Europe. Many valuable pictures by the old masters were consumed, and much of the costly furniture.

The Castle on the north overlooks the wide and fertile valley of Belvoir that embraces parts of Lincolnshire, Leicestershire, and Northamptonshire. Tall spires of ancient churches mark the sites of towns and villages—Bottesford and Newark are the most conspicuous—and in the distance in a commanding position is a fine view of Harlston Hall. On a clear day may be seen the towers of Lincoln Minster at a distance of thirty miles. The range of limestone hills, part of the Backbone of Lincolnshire as it is called, bound the view to the east, but being wooded and broken diversity and interest is given to the landscape. On the south the hills attain a greater elevation, extensive woods clothe those more immediately contiguous and partly fill the valley. Broad open park-like glades break the uniformity of the expanse of wood, and the river, which sweeps boldly through the valley, greatly improves the beauty of the scene from the Castle terraces. Westward the eye ranges over parts of Nottinghamshire and a series of wooded heights in Leicestershire that seem to stretch away and unite with the distant range of Charnwood Forest. From the terraces extensive views of thirty miles are obtained in different directions, and 174 towns and villages have been counted within the circle of its horizon. On the south side of the Castle there are three terraces, and the ascent to them is by a noble flight of stone steps. The second terrace contains a quaint garden filled like the other portions of the ornamental gardens with spring-flowering plants. The walls of this garden are clothed with climbing plants in fine condition. There are magnificent spe-

pre-eminent; its bright, delicate, azure blue flowers are really charming. Mr. Ingram has been engaged for many years in improving the Arabis and Aubrietia, and he has succeeded in bringing these beautiful harbingers of spring to a state of high perfection. I noticed the former had short stout flower stalks supporting broad trusses of bloom, while the latter were covered with a profusion of nearly bright purple flowers that almost obscured the foliage. Mr. Ingram has also a variety of Aubrietia almost pink, though the blooms are not large, and it flowers rather late. There were also thousands of Primroses, Polyantheses, and Oxlips varying in colour from the various shades of cream and yellow to a glowing crimson. The Oxlips are a speciality, for of these there is a large and varied collection; some of them with tall flower stems, and others with the habit of the common Primrose. Wallflowers are remarkable for their dwarf habit, for they are scarcely a foot high and one mass of bloom. Another most striking plant used for its bronzy purple foliage was *Heuchera lucida*, used extensively as an edging plant. I have not seen it employed before, but it is very effective and a great favourite at Belvoir. Daisies also hold an honourable position, both the plain-leaved and *Daisy ananabolia*; these may be counted by thousands. Of Saxifragas every conceivable form and variety is brought into use, and *Sedum glaucum*, *Sedum acre*, and *S. acre aureum* grow with the freedom of common weeds. Among dwarf shrubs *Ericas* are the most useful. *Erica carnea* was very effective and striking, and another white variety was also turned to good account.

I must now make a few remarks on the style of bedding-out, and we will take our standpoint at the Castle Garden. Carpet bedding finds favour at Belvoir, and for that purpose *Sedums*, *Saxifragas*, and similar close-growing plants are employed, while over them, standing thinly, there are such plants as *Erica carnea*, Tulips, and Hyacinths. In this garden there are,

perhaps, two dozen or more beds varying in size and shape and style of planting. Here is a group of seven beds, with one raised bed in the centre and six others radiating from it. The centre bed was a mixture of *Yuccas*, *Myosotis dissitiflora*, *Scilla præcox*, Primroses, and Tulips, with a groundwork of *Sedum* and *Saxifragas*. In fact, Mr. Ingram's great object is

plant that Mr. Ingram is trying to improve, and this is the best form of it I have seen; then *Alyssum saxatile compactum*, white Primroses, *Oliveden Blue Pansies*, and the front row of *Phlox Nelsoni*.

A three-lobed bed was covered with a dense carpet of *Saxifraga*, dotted with crimson Tulips, White Hyacinths, and

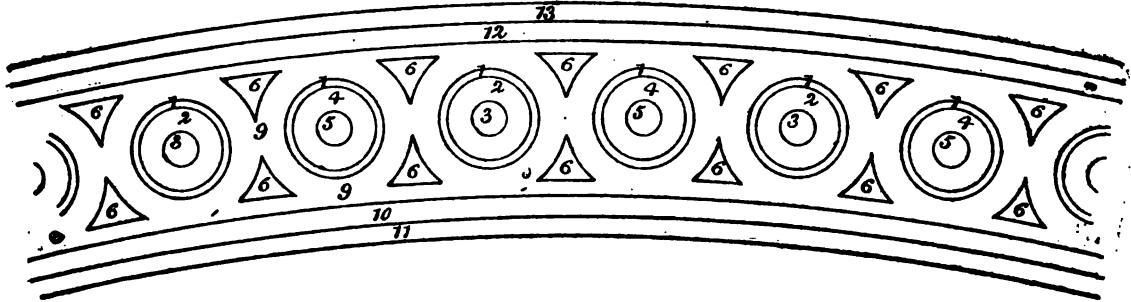


Fig. 110.

- 1, *Santolina chamaecyparissus* (Incana).
- 2, *Aubrietia*.
- 3, *Arabis albidia*.
- 4, *Erica carnea*.

- 5, A dwarf white-flowered Heath, same size as No. 4. All the rings are formed of No. 1, and the centres alternate, 2 and 3, and 4 and 5.

- 6, *Daisy aucubefolia*.
- 7, *Blue Pansy*.
- 8, *Myosotis dissitiflora*. The triangles are formed of No. 8, and filled-in with 7 and 8 alternate.

- 9, *Golden Thyme*.
- 10, *Oxlips*.
- 11, *Saxifraga cordifolia*.
- 12, *Yellow Viola*.
- 13, *Sedum glaucum*.

to cover every inch of naked soil, and to accomplish this end thousands of plants are used with close neat foliage or brilliant flowers. The other six beds were planted in pairs. The first pair had a clump of delicate Primroses in the centre, then divided into three compartments, the dividing lines formed of bright Oxlips, filled-in with *Aubrietia* edged with *Golden Feather*. The second pair had a groundwork of *Sedum glaucum*, dotted over with *Erica carnea* and *Myosotis dissitiflora*, edged with *Heuchera lucida*. The third pair had a clump of red Hyacinths in the centre edged with *Myosotis dissitiflora*, then a ring of *Arabis albidia*, with another circle of *Scilla præcox* and blue Pansies, an outer edging of *Daisy aucubefolia*, and the whole dotted over with bright Tulips.

Four other irregular-shaped beds were planted so as to correspond with each other. The centre of each was a clump

Scilla siberica. Several circular beds had raised edgings of Sweet Briar and Ivy, and planted with a mixture of *Erica carnea*, Hyacinths, Tulips, and *Veratrum nigrum*. In shady places were masses of Violets—in fact, they were to be seen in all directions by the side of walks and at the entrance into each department of the pleasure garden. There are other beds equally worthy of notice, but we must pass on to the Duchess's garden. Here there are a series of terraces 90 feet long, all a mass of glowing colours, and surrounded with fine trees just unfolding their varied tints of green, and reminding us of the approach of summer and bright sunshine in the future. In the background was a group of Silver Birch, which heightened the beauty of the scene. These terraces were rich in colouring, and the charming effect produced at once convinced us it was the work of a skilled artist. For the

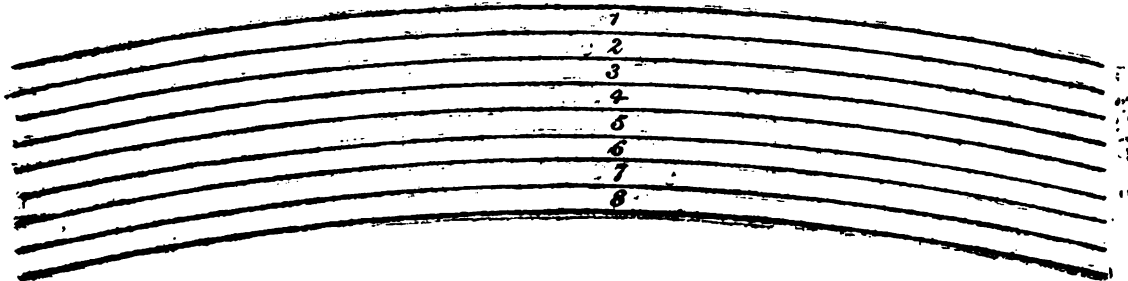


Fig. 111.

- 1, *Saxifraga crassiflora*.
- 2, *Aubrietia*.

- 3, *Arabis albidia*.
- 4, *Myosotis dissitiflora*.

- 5, *Oxlips*.
- 6, *Blue Pansy*.

- 7, *Crocus*.
- 8, *Sedum aureum*.

of red, white, and blue Hyacinths, encircled with *Euonymus radicans variegata*, this was again surrounded with a band of *Erica carnea*; next another ring of *Arabis*, then *Aubrietia*, with another band of yellow Primroses and an outside circle of red Daisy. Another large and effective bed had the centre of *Arabis*, dotted with Hyacinths and belted with a broad band of *Myosotis dissitiflora*; then a chain was formed all round of *Euonymus radicans variegata*, the links filled-in with *Scilla præcox*, Oxlips, and *Aubrietia*, and the outside the chain filled to the margin of the bed with *Daisy aucubefolia*, the whole, except the centre, dotted with yellow Tulips. Near at hand was another bed with *Saxifraga ciliaris præcox* and Hyacinths for the centre; then a ring of *Erica carnea*, with another of Oxlips, belted in turn with yellow Tulips, *Arabis*, and *Aubrietia*; then there were circles all round formed of *Aubrietia*, these being filled with variegated Thyme, white Primroses, and Oxlips in rotation, the scallops being filled-in with *Daisy aucubefolia*, and the outside edging of red Daisy. One large bed worthy of notice had *Saxifraga cordifolia* for a back row, next a row of *Pulmonaria variegata*, an old-fashioned

style of planting these terraces I refer the reader to the accompanying engravings.—Q. R.

SYRINGING VINES.

Too often, I fear, the application of the syringe to the Vines is more injurious than beneficial. The operation of syringing Grapes I have always considered a matter of importance in Grape-growing. The purity of the water I look upon as the first consideration. In smoky and thickly inhabited localities water pure and clean is difficult to obtain. In the early stage of the Vines, and up to the flowering period, water may be applied with a fine syringe in a gentle refreshing shower, closing the house previously to syringing, allowing the temperature to advance to 85°, not omitting to place the thermometer in the pans, proving that the water is of the same temperature as the house. The paths of vineries and borders should not become dusty and dry in scorching days. Watering several times a-day over borders and walks will have the effect of keeping a healthy vapour in the house that will tend to keep

the foliage healthy and luxuriant, and will be beneficial for keeping down thrips and red spider.

But in syringing Vines after the fruit has set I fail to perceive the advantage derived therefrom, inasmuch as there is a likelihood or probability of injury to the bloom of the fruit. Vividly can I remember some time ago the circumstances relative to a fine house of Grapes situated in the north of Ireland that completely fell a victim to reckless syringing. The water was obtained from a running river, as the supply on the place was limited, and with this water the gardener incautiously ordered the Vines to be syringed. Previous to syringing in the evening of each day the water was placed in pans to settle, and became apparently as clear as crystal, yet contained sufficient mineral matter to accomplish much mischief, for as soon as fruit was coloured the berries were covered with a whitish incrustation, which marred their appearance and proved what a mistake had been made in syringing.

I am fully convinced that success can be attained in Grape-growing without any systematic application of water to the foliage of the Vines in the usual form of daily syringing.—J. BORD, *George's Hill*.

CRYSTAL PALACE SHOW.

MAY 19TH.

CONSIDERING the great number of exhibitions which are provided for public patronage, it is not a little surprising to find at each such numerous and excellent collections of plants. Large prizes, however, are tempting, and "the Palace" Company are certainly not behindhand in liberality. The schedule comprised thirty classes, and in these £400 was offered in prizes. Upwards of £80 was provided for stove and greenhouse plants, £80 for Roses, £57 for Azaleas, and nearly £80 for Orchids. In most of the classes there was good competition, the stages being all occupied and the collections well arranged.

For twelve stove and greenhouse plants in bloom (nurserymen), Messrs. Jackson & Sons, Kingston, had the first place with an admirable group, *Imantophyllum minimum* was 4 feet across with thirty fine flower heads; *Hedera fuchsoides*, *Statice profusa*, *Clerodendron Balfourii*, *Aphelexis macrantha purpurea*, *Epacris grandiflora rubra*, *Erica Cavendishii*, and *E. tricolor Wilsonii* were perfect globes 5 to 6 feet in diameter; *Anthurium Scherzerianum* was in splendid condition, having forty fine spathes; *Azalea Criterion* was also very fine. Mr. B. S. Williams had the second place, *Anthurium Scherzerianum* being exhibited in splendid condition. In the corresponding amateur's class for nine plants, Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, had the premier position with large, healthy, trim specimens. *Genetyllis tulipifera*, *Azalea magnifica plena*, and *Erica Cavendishii* were globes of 5 to 6 feet in diameter; *Anthurium Scherzerianum* was in grand form; *Erica ventricosa magnifica*, *Franciscea confertifolia*, and *Statice profusa* were also in admirable condition. Mr. Peed, gardener to Mrs. Tredwell, St. John's Lodge, Bower Norwood, had the second place with, amongst others, a grand example of *Imantophyllum minimum*, an excellent plant of *Clerodendron Balfourii*, also good *Azaleas*—*Symmetry* and *sinensis*, not "*indica*" *sinensis*, as ticketed—two large *Ericas*, and an excellent specimen of *Tetralix eriooides*. This was a very good group. Mr. Legg, gardener to S. Ralli, Esq., Cleveland House, Clapham Park, had the third place with smaller plants. In this collection *Ixora amboynensis* was in a superior state, and the *Aphelexes* were well cultivated. In the class for six stove and greenhouse plants (amateurs), Mr. Peed had the first place with the same kinds of plants as previously enumerated; Mr. Strahan, gardener to P. Crowley, Esq., Waddon House, Croydon, being placed second with loose plants.

In the class for twelve fine-foliated plants (open), Mr. J. H. Ley, Croydon, might consider himself fortunate in being placed first with large Palms, &c., worse for wear, and also unnamed; second honours being for some mysterious reason bestowed on Mr. Wright, Florist, Lee, Kent, for an excellent group. The Palms *Areca Verschaffeltii*, *Demonorops palembanica*, *Latania borbonica*, and *Kentia australis* were in fine condition; while *Maranta leopordina*, *Pandanus Veitchii*, *Dieffenbachia nobilis*, and *Ocotons* were very superior. Quality and variety were in this class swamped by size, and no small commotion was caused by the decision of the Judges. For eight fine-foliated plants (amateurs), Mr. Harrow, gardener to H. Bessemer, Esq., Denmark Hill, Camberwell, had the first place with a large plant of *Cocos Weddelliana*, *Geonoma Seemannii*, very good; *Ocoton Weismannii*, strangely like a plant exhibited last year by Mr. Legg; *C. variegatum*, *C. pictum*; *Yucca aloifolia variegata*, *Pandanus Veitchii*, and *Dasylium gracile*, all good. Mr. S. Strahan, gardener to P. Crowley, Esq., being second with, amongst others, *Cyanophyllum magnificum*, *Dieffenbachia Bowmannii*, *Ocotons*, a Palm, and *Phormium tenax variegatum*.

For a group of stove and greenhouse plants arranged for

effect the first prize was awarded to Mr. Walter Foreman, gardener to E. C. Nicholson, Esq., Carlton House, Herne Hill; Mr. Joseph Bristow, gardener to G. Campbell, Esq., Wood Hall, Dulwich, being placed second for attractive collections.

For eight *Ericas* distinct (open), Mr. Peed, gardener to Mrs. Tredwell, had the first place for irregular-sized plants; *E. elegans*, *E. ventricosa coccinea minor*, and *E. magnifica* being large and good, the rest small. For six *Ericas* distinct (amateurs), Mr. Ward had the premier place with fine symmetrical plants, but not quite at their best, of *E. affinis*, *E. florida*, *E. elegans* (very good), *E. depressa multiflora*, *E. tricolor impressa* (a splendid plant), and *E. ventricosa coccinea minor* as the best; Mr. Peed being placed second for large and somewhat loose plants; and Mr. Legg third with smaller young plants of uniform size, well trained, and in excellent health.

For nine *Azaleas* distinct (open), Mr. Child, gardener to Mrs. Torr, Garbrand Hall, Ewell, was easily first with the best plants that have been exhibited this year: they were obtuse pyramids 5 to 6 feet high and 8 to 4 feet through, not too formal, but well bloomed. *Duchesse Adelaide de Nassau*, *Criterion*, *Holfordii*, *Duchesse de Nassau*, *Iveryana*, and *Semi-duplex maculata* were especially fine. Mr. Peed was placed second; and Mr. Batty, gardener to R. Thornton, Esq., Sydenham, third. For six *Azaleas* (amateurs), Mr. Batty was a long way ahead with plants remarkable for their size, but not all of them well bloomed, *A. Ohelsonii*, however, was fine, and Mrs. Fay perfect; *Juliana* was also very good. Mr. Wheeler, gardener to Sir F. H. Goldsmid, was second with medium-sized irregularly-shaped plants. For twenty *Azaleas* (open), pots not to exceed 16 inches in diameter, Mr. Turner, Slough, was first with a very good collection—good plants and good varieties. Amongst the deep colours *Madame Thibaut* and *Roi d'Holland*; and amongst the lights *Apollo* and Mr. Turner, two splendid kinds, were conspicuous. Mr. Batty was placed second with standard and oval-shaped plants in good condition, the foliage being healthy and the flowers fine, *Grandie*, *Apollo*, and *Louis Napoleon* (double pink) being noticeable; Messrs. Ivery & Son being third with medium-sized but rather loose plants, *Stella* amongst the scarlets and *Bride of Abydos* amongst the lights being the best.

For ten Orchids (nurserymen), Mr. B. S. Williams, Holloway, was in his old premier position, some of the plants having won honours at the Aquarium, also in Brussels. In this collection *Dendrobium Falconeri* was in splendid condition; *Cypripedium barbatum superbum*, grand; *Anguloa Clowesiana*, *Trichopilia crispata*, *Saccolabium retusum*, &c. were all in good form. Messrs. Jackson & Sons, Kingston-on-Thames, were second with a grand plant of *Dendrobium nobile*, *D. Devonianum*, very good; and fresh examples of *Saccolabium retusum*, *Phalaenopsis amabilis*, and *Cypripedium candidum*. In the class for eight Orchids (amateurs), Mr. Ward, gardener to F. G. Wilkins, Esq., had the first place with *Masdevallia Harryana*, very fine and richly coloured; *Odontoglossum Phalaenopsis*, a superior plant; *Dendrobium Falconeri*, splendid flowers; *Odontoglossum Pescatorei*, *O. hystrix*, *Vanda tricolor*, *Lycaste Skinneri*, and *Oncidium serratum*, all very good. Mr. Child, gardener to Mrs. Torr, Garbrand Hall, Ewell, was second with fine examples of *Cypripedium Stonei* and *C. barbatum superbum*, *Lelia purpurea pallida*, *Saccolabium retusum*, *Trichopilia suavis*, *Dendrobium Devonianum*, &c. Mr. Wheeler, gardener to Sir F. H. Goldsmid, being placed third. In Mr. Child's group the plant of *Cypripedium Stonei* had four spikes and seventeen fine flowers, and was a very superior specimen; Mr. Wheeler's most noticeable plant being *Dendrobium tortile* roses, a charming Orchid, but the flowers were somewhat faded. In the class for six Orchids (amateurs), Mr. Ward had the first place with a fresh bright group: *Odontoglossum Bluntii* had six fine spikes; *Epipendrum vitellinum majus* three vigorous spikes 18 inches high; *Odontoglossum bicktonense* seven spikes, very fine; and *O. hystrix*, very good.

For six *Dracenas* (open), Mr. Legg, gardener to S. Ralli, Esq., had the first place with the same fine plants that were successful at the Aquarium; Mr. Wright, Lee, being second also with the Aquarium collection; Mr. Willis being third for an excellent half-dozen worthy of being placed equal second; and Mr. Ley's, which had nothing of a third prize. These collections formed a remarkably fine bank of plants. Mr. Willis did not of course exhibit his new gold medal varieties.

For six *Ocotons*, distinct, in pots not exceeding 16 inches in diameter, Mr. Harrow, gardener to H. Bessemer, Esq., was first with a valuable collection. *O. angustifolium* was very large, and *O. majesticum* one of the finest plants ever exhibited; *O. spirale* was also in superb condition, *O. undulatum* in fine colour, and *O. Youngii* and *O. Weismannii* very good. Mr. Williams had the second place with very large specimens of older varieties.

For six Palms Mr. Legg, gardener to S. Ralli, Esq., was first with a superb collection—fine sorts splendidly cultivated. *Stevensonia grandifolia* had fronds 6 feet in length and 2 feet 6 inches in width; *Verschaffeltia splendida* was approaching the same dimensions; *Demonorops perisanthus*, *D. palembanica*

ous, and *Meteroxylon filiare*, all very superior. Mr. Harrow was second, and Mr. Peed third.

In the class for new and rare plants (open) Mr. B. S. Williams had the first place, with not only new and rare, but fine plants. They comprised *Araucaria Goldiana*, *Pandanus Veitchii*, *Cycas intermedia*, *Maranta Makoyana*, *Kentia Moorei*, *Aralia elegantissima*, *Adiantum gracillimum*, *Polystichum lepidocaulon*, and *Woodwardia radicans cristata*. Mr. Ley, Oroydon, was placed second with large certainly, but not "new and rare" plants, at least not so much so as the excellent group of Mr. Wills, who somewhat strangely was placed third for *Artocarpus Cannoni*, *Phyllotanium Lindenii*, *Anthurium crystallinum*, splendid; *Aralia elegantissima*, *Maranta Makoyana*, *Nidularium spectabile*, *Pandanus Veitchii*, *Paulinia thalyctrifolia*, and *Abutilon Sellowianum variegatum*.

For twelve stove and greenhouse Ferns distinct (open), Mr. B. S. Williams was overwhelmingly first with *Cyathea Dregei*, *Dicksonia squarrosa*, *Alsophila australis*, *Cybotium Mendellii*, *Marattia elegans*, *Gleichenia semivestita*, a magnificent specimen, 5 feet through, and in all respects perfect; *G. Mendellii* and *G. rupestris*; good examples of *Davallia Mooreana* and *Adiantum farleyense*, and an elegant plant of *A. gracillimum*. Mr. Wheeler was placed second for small plants.

In the class for nine plants suitable for dinner-table decoration in 6-inch pots Mr. Wills was placed first for a charming group in admirable condition, comprising the new *Dracaenas Frederici* and *D. Ernesti*, which combine elegance of form with brilliant colouring; *Palms Kentia Fosteriana*, *Cocos Weddelliana*, and *Thrinax elegans*; *Aralia leptophylla*, *Phyllarthron commorense*, *Ocrotus Weismannii*, and *Pandanus Veitchii*. Mr. Harrow, gardener to H. Bessmer, Esq., had the second place with rather larger plants; third honours going to Mr. Wright, Lee, Kent, with much the same kinds of plants as exhibited by Mr. Wills. In this class there were nine competitors, each staging creditable collections, and which were greatly admired.

For eight Show Pelargoniums in 8-inch pots (nurserymen), Mr. Turner, Slough, had the first place with specimens not quite at their best. Conspicuous was the brilliancy of *Prince Leopold*; *Protector* was also very fine, and very good were *Isabella* and *Emily*. The French type, *Duchesse de Morny* and *Madame O. Keteleer*, were densely flowered; and *Digby Grand* was massive. In these and some other Pelargoniums exhibited there was also a profuse display of green sticks. In the corresponding class for amateurs Mr. James, gardener to W. F. Watson, Esq., Redless, staged remarkably fine specimens, 3 to 4 feet across, of *Prince Leopold*, *Rob Roy*, *Princess of Denmark*, *Mary Hoyle*, *Statesman*, *Pericles*, *Rosa floribunda*, and *Snowflake*—excellent varieties excellently grown, but the flowers not quite fully expanded. In the nurserymen's class for six Fancy Pelargoniums, Mr. Turner, Slough, was the only exhibitor, and took the first prize for nice plants. *Princess Teck*, *Countess of Dudley*, *Ellen Beck*, and *Excelsior* being the best, the flowers of all being very fine, and colours bright. In the corresponding amateurs' class Mr. James won with a noble group, the plants being perfectly-shaped semi-globular plants, in splendid bloom and condition, the best being *East Lynn*, a fine variety; *Lucy*, *Ellen Beck*, *Juliet*, *Aome*, and *Princess Teck*, the finest plant ever exhibited. These plants were not fully expanded, but still they were in grand form. A third prize was awarded to Mr. Farmer, gardener to G. Maule, Esq., Putney Heath.

For nine Roses in pots (nurserymen) Messrs. Paul & Son, Chesham, and Mr. Turner, Slough, were, the same as last year, placed equal first. The grand plants in these collections have been recently noticed at the Aquarium. The Slough plants had the finest flowers and were in pleasing variety. The Chesham specimens were all crimson and light varieties, and were deficient in rose colour. The plants were larger than those from Slough, and the blooms more numerous. The plants in both collections, however, were masterpieces in Rose culture, and the honours which they won were well merited. For twenty Roses in pots not to exceed 8 inches in diameter Mr. Turner was first; *Peach Blossom*, *Hippolyte Jamain*, *Mdlle. T. Levet*, *Madame Laoharme*, and *Royal Standard*, extra fine; *Dupuy-Jamain* and *Beauty of Waltham* being amongst the best. Messrs. Paul and Son were second, the most noticeable being *Madame Denis*, pure; *Madame Laoharme*, very superior; *Princess Beatrice*, *La France*, *Caroline Kuster*, charming; and *Etienne Levet* with enormous blooms. The plants in these classes were 2 to 2½ feet over, each plant having twenty or thirty blooms.

For nine Calceolarias Mr. James, the invulnerable, was first with magnificent specimens of culture and fine and distinct varieties. Mr. Waters, gardener to A. Mongredien, Esq., Forest Hill, being placed second for a very creditable collection, and Mr. Griffin third.

First-class certificates were awarded to Mr. John Laing, Forest Hill, S.E., for *Geranium J. Jenner Weir*, *Pelargonium Exquisite*, *Caladium Madame de la Deransaye*, and *Geranium Purity*; to Mr. B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, for *Ocrotus Disraeli*, *Woodwardia radicans cristata*, *Bertolonia Van Houttei*, and *Polystichum lepidocaulon*; to Mr.

John Wills, Melbourne Nurseries, Anerley and Kensington, for *Bertolonia Van Houttei*; to Messrs. W. Paul & Son, Waltham Cross, for *Rose Star of Waltham*; to Mr. Henry Hooper, Widcombe Hill, Bath, for *Pansy Jupiter*; and to Mr. G. Smith, Tollington Nursery, Hornsey Road, Islington, N., for *Pelargonium Wonderful*.

Valuable miscellaneous collections were staged. An extra first prize was awarded to Messrs. Rolleston & Sons, Tooting, for a large and fine group. Mr. Wills had a charming group; the *Crotons Youngii*, *undulatum*, *Weismannii*, and *ovatifolium* being in admirable condition. *Paulinia oesana* was most elegant, *Adiantum speciosum* distinct and fine, *Bertolonia* in fine colour, and *Yucca filamentosa variegata* in the most perfect state imaginable. Mr. Laing, Stanstead Park, staged a capital group. The *Bicolor Pelargoniums*, including some seedlings, were very superior; the *Palms*, *Ferns*, and *Pandanus Veitchii* being also in excellent condition. In this group *Sempervivum Bollii* had a novel effect. Messrs. James Carter & Co. staged a superior group of ornamental plants and their fine plants of tree *Mignonne*. Mr. Noakes, Beckenham, exhibited a group including flat—too flat—examples of training variegated *Pelargoniums*. Mr. Parker, Tooting, staged a very fine collection of hardy herbaceous plants in about fifty varieties, which were greatly admired by visitors. Mr. Ley, Oroydon, exhibited a collection of *Palms* and other ornamental plants. Mr. B. S. Williams also exhibited *Palms*, *Ferns*, and new plants in the Miscellaneous class. For the above extra second prizes were awarded. Messrs. Dobson & Sons staged *Calceolarias* which would have looked quite as well or better without their names. Messrs. W. Paul & Son exhibited their fine *Rose Star of Waltham*, which appears to possess every good property—fine foliage, rich and well-shaped blooms, high perfume, and free growth. Mr. Hooper, Widcombe, Bath, exhibited a splendid display of *Pansies*, also *Tulips* and *Daisies*, and received an extra prize; and Mr. Bristowe, gardener to G. Campbell, Esq., Wood Hall, Dulwich, *Strawberries* in pots bearing a good crop of ripe fruit. Mr. Thompson, the able Superintendent of the Crystal Palace Gardens, also ornamented some parts of the structure with plants excellently cultivated and admirably arranged.

Some garden requisites were also exhibited. Messrs. Dick Radcliffe & Co. had attractive Fern cases, Mr. Voice and Mr. Horley their improved Cucumber frames; and last but not least a new boiler exhibited by Wolstenholme Brothers & Co., Ludgate Hill Chambers, London. It was invented by Mr. Wagstaff, Dunkinfield near Manchester, and has been successfully employed in that district. It has been described as an "upright tubular saddle," but it is not an upright boiler, and a "skeleton saddle" would more appropriately describe it. It is simply a saddle boiler, the arch being formed of a series of ribs or tubes through which the water circulates. Below the crown—that is, at the sides of the saddle, are interstices between the hollow ribs, so that the fire, after impinging on the dome of the arch, passes through and acts on the whole outer surface of the boiler; further, over the arch of pipes a crown can be placed, making it a double saddle. The boiler is in sections, and can be increased in size as desired by adding more tubes, and every part can be expeditiously cleaned. This invention (patented) no doubt contains the elements constituting a powerful heating apparatus, and which by its construction is calculated to burn anything which is burnable—a matter of no small importance in certain districts.

THE MOREL—HYDRANGEA FLOWERS.

SEEKING an account of the Morel in this Journal I am induced to send you a rough drawing (exact size) of one gathered by my daughters a few days previously. The sketch scarcely conveys an adequate idea of its size. It is the largest I ever met with, though in some seasons and localities near here this fungus is not uncommon. It grows generally beneath Ash trees in plantations.

Twenty years since I took a prize at Nottingham with a plant of the *Hydrangea* with blue flowers. It was always watered with a decoction of sheep dung, a large lump of white quicklime (called here crichlime), from Derbyshire being put into the tub. I think any lime made from mountain limestone would do, having usually seen the blue flowers in mountain limestone districts.—JOHN S. HEDDERLEY, *Bulcoote, Notts.*

[The Morel sent was 6 inches high, and of these the cap or pileus was 4½ inches, and its largest circumference 10½ inches. The drawing is very creditable to the artist.—EDS.]

HARDY SPRING BEDDING PERENNIALS.

1, *VIRGINIAN STOCK*, very hardy; 2, *Sweet Woodruff* (*Asperula odorata*) is lovely in my garden just now, masses of pure white blossom and delicate green leaves. In a sandy soil it runs underground rampant, just as *Musk* does in a moist one; but

with a little care is easily kept within bounds. It is very useful, as coming into blossom just as white *Arabis* is going out.

MEMORIAL OF M. VAN HOUTTE.

We have received from Ghent a prospectus of a projected memorial to M. Van Houtte, which is to take the form of a monument to be erected over his grave in the churchyard of Gendbrugge. Our first impulse would be to join in that proper way of doing honour to one whom we all delighted to honour while he was amongst us; and no doubt the thing will be done and done well whether we unite in doing it or not.

As British horticulturists who have long and often met with so many cordial receptions from our Belgian friends, and who through close and frequent intercourse have become almost one in thought, in sentiment, and in interest; can we not unite among ourselves and raise a special memorial? The Veitch Memorial furnishes a good model for us to follow, and a fund might easily be raised sufficient for the purpose.

The plan would be to raise a fund to be invested in the names of the Lindley Library Trustees, the interest of which should accumulate for five years, and the amount spent on a *Van Houtte Medal*, to be awarded at every quinquennial horticultural exhibition at Ghent as the premier prize for new plants. Let a committee be formed at once, and we have no fear that some such scheme will be successfully carried out.

On the eve of going to press we are informed that there has been a conference of nurserymen and others, at which it was decided to promote a British memorial of M. Van Houtte, and that a meeting will be held at South Kensington on Friday, June 2nd, at 2 P.M., to further this object.

NOTES AND GLEANINGS.

THERE is to be a great EXHIBITION OF ROSES AT LYONS on the 2nd, 3rd, 4th, and 5th of June, consisting of twenty-five classes. Intending exhibitors are requested to communicate before the 25th of May with M. Léon de St. Jean, President of the Société des Roséristes, cours Morand 12, Lyons; or with M. Jean Siale, General Secretary, Rue St. Victor 15, Monplaisir, Lyons.

— In the four months ended the 30th ult. there was a large increase in the importation of POTATOES. This year the value was £535,134, and last year £326,997.

— THE new *ARALIA* which was exhibited by Messrs. James Veitch & Sons at the last meeting at South Kensington, and to which a first-class certificate was unanimously awarded, was described in our report as *A. Veitchii*: it should have been printed *A. Veitchii* elegantissima. It is a plant of extreme gracefulness, and for dinner-table decoration especially must have a foremost place on account of its refined elegance. It is, in fact, *Aralia Veitchii* in miniature, which is sufficiently descriptive of this remarkably chaste plant.

— WE are informed by Mr. Charles Van Geert of Antwerp that the VARIEGATED *EUPHORBIA* (*AMYGDALOIDES*) which was referred to as having been seen in his nursery, is not, as was supposed, perfectly hardy. "Indeed, I have a doubt," writes Mr. Van Geert, "if it is truly a variety of *E. amygdaloides*, which is a perfectly hardy wild plant in Belgium as in England." The variegated plant with variegated flowers referred to is nevertheless both interesting and attractive. Mr. Van Geert also states that the fine deciduous *Magnolia Lenné* is a variety (purplish crimson) of *M. conspicua*. *M. Lenné* was named after the celebrated gardener to the King of Prussia, and has endured uninjured 17½° of frost Centigrade, which is equivalent to 31° of frost Fahrenheit. This showy spring and also autumn-flowering deciduous shrub—or tree—is consequently hardy in England, where possibly, to a limited extent, it may already be grown. If not it ought to be.

— WE have received a plant of *EUPATORIUM RIPARIA* VARIEGATA sent out by the raisers, Messrs. Rodger, McClelland, and Co., Belfast. It was exhibited at the International Show, Belfast, and obtained a first-class certificate. They state that it is all but hardy, stands well during winter in a cold frame, even where frost is barely excluded, and grows freely out of doors in summer.

— At the usual fortnightly meeting of the HORTICULTURAL CLUB on Wednesday evening last, held at the Club House, 4, Adelphi Terrace, and which was very fully attended, the subject of the next International Horticultural Exhibition in

London was brought forward. It was felt there were two great difficulties connected with it as compared with that of 1866—a chairman to equal (in energy and interest in the undertaking) Sir O. W. Dilke, and a site as suitable as the ground at South Kensington now occupied by the Natural History Museum. One practical result ensued from the discussion—the Committee of the Club offered their room for the use of the Committee of the International Exhibition, and its central position and facility of access will make it a most desirable place for the purpose.

— WE understand that Mr. THOMPSON, who succeeded Mr. E. Bennett in the management of the Hatfield Gardens, is leaving, and will be succeeded by the foreman from Linton Park near Maidstone.

— THE spring show of the READING HORTICULTURAL SOCIETY was held on the 17th inst. £200 were offered in prizes, and a goodly number of competitors entered the classes. The principal prizetakers were—for stove and greenhouse plants, Mr. Tudgey, gardener to J. F. G. Williams, Esq., Henwick Grange, Worcester; Mr. Mearring, gardener to W. Whitley, Esq.; and Mr. Parham, gardener to G. May, Esq. For Orchids, Mr. Applin, gardener to H. G. Simmonds, Esq.; Mr. Higgs, gardener to Mrs. Grayshaw, Caversham Park; and Mr. Basket, gardener to W. J. Palmer, Esq. For fine-foliage plants, Mr. Tudgey, Mr. Applin, and Mr. Mearring. For Azaleas, Mr. Higgs; Mr. Miller, gardener to C. Ellis, Esq.; and Mr. Lees, gardener to Mrs. Marshall, were successful, and the exhibitors named were also to the front in several other of the plant classes. Very good Grapes were exhibited by Mr. Tegg, gardener to Mr. Walters, M.P., and Mr. Ashby, gardener to W. Fanning, Esq.; and Strawberries by Mr. Bellis, gardener to Major Thoyts, and Mr. Fowle, gardener to Sir Henry Mildmay, Bart. Mr. Tegg, Mr. Ashby, and Mr. Fanning also exhibited excellent Peaches. The Exhibition was a successful one.

— NOTWITHSTANDING the inclement weather of the past three weeks the spring flowers in the BEDS of THE CRYSTAL PALACE GROUNDS are now very attractive. In order to produce a continuous display Mr. Thompson has associated bulbs with hardy spring-flowering plants; the former are now over, but the latter bright and gay. They consist of *Violas*—a yellow variety being especially floriferous, and a rich deep purple being also very effective—*Anubrietas*, *Iberis*, and *Daisies* by thousands. It is surprising what an enlivening effect may be produced by the systematic use of these simple hardy flowers. The beds are gay, and the grounds are in excellent order. In the interior of the Palace we cannot fail to note how clean, fresh, and healthy are the Ferns and plants generally. A great improvement has been effected by the removal of roots and replacing them by stones on the rustic mounds. The Ferns, &c., on these mounds are growing freely, and the neatness and excellent order of the horticultural part of the noble structure demonstrate that this department is entrusted to skilful hands, and that Mr. Thompson is, as is so frequently remarked, "the right man in the right place."

— At the second show of the ROYAL HORTICULTURAL SOCIETY OF IRELAND, which was held at the Exhibition Palace, Dublin, on the 18th inst., the Society's cup for twelve large exotics was won by Mr. Smith, gardener to his Grace the Lord Lieutenant; the cup for the same number of plants in pots not exceeding 10 inches in diameter going to E. P. Westby, Esq., Mr. Westby also winning the cup for nine Palms. The plants in these classes we are informed were exceedingly fine. The cup for nine Roses in pots was taken by Mr. Fry. In the fruit department the *Irish Farmers' Gazette* states that good white Grapes were exhibited by Mr. R. Dowd, of New Park, Co. Kildare, and first-class Black Hamburgs came from the Viseregal Gardens. A good dish of Peaches (Early Rivers) was exhibited by Mr. Millner. There were some good dishes of Strawberries, Sir J. Paxton and British Queen being the best varieties. Some well-kept dishes of dessert Apples were noticeable, Ribston Pippin, Court Pendu Plat, and Cox's Orange being the prizetaking sorts. Mr. Cobbe took first for baking Apples with fine fruit of Alfriston. The show of vegetables was small but good.

CLIMBING ROSES.

REFERRING to Mr. Muir's excellent selection of climbing Roses (see page 334), he discards *Devoniensis* as next to worthless. This induces me to differ materially with him, as we have several plants of it here 16 feet high in the conservatory in splendid condition trained to the upright supports. In the

same building are several others that Mr. Muir gives preference to which have scarcely a bloom on them, and when at their best Climbing Devonians was equal to them. One plant of *Devonians* at the present time is literally covered from top to bottom with beautiful half-expanded blooms. A large number have been out from this plant, and the quantity of small buds shows promise to give a supply for some weeks to come.—T. COATES.

THE KIDNEY BEAN AND ITS CULTURE.

MR. RECORD recently remarked that the Scarlet Runner is so popular and so useful that even in towns every spare wall is appropriated to its support. Possibly no plant is more suitable for that purpose—for covering walls and fences in villa gardens, where that which is useful is of more moment than that which is simply attractive. But the Scarlet Runner combines ornament with utility, and hence its popularity. This popularity it has enjoyed for a great length of time—certainly for upwards of two centuries, for it is on record that it was grown by Tradescant in his garden at Lambeth, but probably for the beauty of its flowers; Miller of Chelsea in the following century being reputed to be the first to establish its usefulness as a culinary vegetable. It is supposed to be a native of India, but was introduced into England from South America in 1683.

It has proved to be one of the most valuable introductions, for it is one of the most profitable vegetables that can be grown. But not only on account of its productiveness, agreeable flavour, and nutritious properties is it valuable, but also on account of the period in which it is in use. When the more delicate kinds of vegetables are over, when Peas are frequently devoured by mildew, when Cauliflowers begin to pall on the palate, when Potatoes have lost the novelty and the relish of newness, then comes the harvest of Kidney Beans, which continue until destroyed by frost. Ordinarily they are in use for about ten weeks—from the beginning of September to the middle of November; but by special culture and care it is not difficult to have them from July, thus extending their use for a quarter of a year. Mr. Taylor has told in one of his excellent articles how they may be had in use at the early period named. I know by experience how valuable is the mode of culture which Mr. Taylor adopts—that is, sowing the Beans early in pots, pinching them, subsequently planting them in good soil, and not permitting any pods to ripen their seed: then will the plants continue bearing until the approach of winter. It is hoped that others have put Mr. Taylor's plan into practice, for it is certainly worthy of adoption by all having the means to carry it out.

Even now the plan of pinching may be resorted to with advantage by those who have neither walls nor sticks whereon to support the plants. In fact it is probable that more Scarlet Runner Beans are produced by the system of pinching than by any mode of training. We have only to visit the vegetable farms in the vicinity of the metropolis, and where we find a rod of ground devoted to the culture of this legume with the aid of sticks we find an acre occupied by crops which have no such aid. The enormous produce yielded by the dwarf mode of culture is sufficient testimony of its value. The Beans are dibbed-in in May in rows a yard apart and about a foot distant in the rows. When the plants are large enough they are earthed-up, and when they commence throwing out their twiners the tips of these are simply chopped off with a sharp hook or sickle. This practice is repeated when needed, which causes the plants to become bushy. The practice of trimming is neither tedious nor expensive, for a man will trim over a large piece of ground in a day. When these fields of dwarfed Scarlet Runners are blooming their effect is extremely rich, the rows being a complete mass of dazzling scarlet, to be followed by pods which may be gathered by handfuls. It is a little singular that this simple and excellent practice is not more generally resorted to in those gardens where supports are by no means plentiful, and as a consequence the supply of Kidney Beans is not so large as is desirable.

But occasionally, if not frequently, dwarf sticks, as pea rods, can be found when tall sticks are not provided, and even by the aid of these low sticks excellent crops of Beans may be obtained. Plant two rows of Beans 2 feet apart, and to these place two rows of sticks of any height, letting them slant inwards until their tops nearly meet. When the Runners have covered these and desire to go up higher stop their progress with the hook or hedge shears, and speedily a hedge of Beans will be formed of great value and the produce easy of being

gathered. If no sticks at all are to be had, or at least only a few stakes, place these stakes at intervals of every 4 or 5 yards, and stretch along their tops a strong cord of double-tarred twine. This should be in the centre of two rows planted at the distance named, and from these by the aid of pegs smaller twine may be taken to the cord at the tops of the stakes, and a hedge will be formed as productive as if the plants were supported by sticks. This mode is frequently adopted in cottagers' gardens in the vicinity of large towns where sticks are too expensive to purchase.

But the ordinary mode of supporting the crop in most gardens is by the aid of tall sticks. It is not necessary that these be more than 7 feet in height, so that the produce may be conveniently gathered, and if the plants are stopped at that height they will be as productive as if permitted to grow some feet higher—that is, if the pods are not permitted to remain to ripen their seed. This latter is an important point where a continuous supply of fresh, crisp, fleshy pods are required. Where it is necessary to save seed it is much preferable to leave a row, or part of a row, for that purpose and not gather from it any of the early pods. The seed will then be finer and better matured than from those pods which are ripened, or partially ripened, on rows which are regularly, or rather irregularly, gathered from.

Where a lengthy supply is coveted the gatherings must be regular—that is, every Bean must be gathered when the pod has attained to half its full size. If these are not required for the ordinary wants of the owner give them away or sell them—anything but suffering them to remain on the plants. Rows thus treated will yield probably double the produce over those on which a considerable portion of the pods are permitted to mature, or, what is more likely, half mature; for the plants have not time to do well the double work of yielding supplies for the table and maturing their seed, for in this case it is almost certain that the earliest pods have been gathered.

It is a remarkable circumstance that a plant so tender as the Scarlet Runner should produce seed which, when well matured, will endure our severest winters uninjured. I have pulled up Beans and sticks together, and piled them away for a more convenient season for removing the twiners. These have been left and exposed to a blast of six weeks' duration, during which the thermometer has several times registered 25° of frost, and the Beans, after passing this wintry ordeal, have been as sound and have grown as freely as others which had been carefully stored and preserved from frost in the seed room. But immature Beans will not endure severe frost, neither do they produce such healthy and profitable plants as full-sized well-ripened seed.

Rows of Scarlet Runners make both attractive and useful dividing and sheltering screens. In gardens which are exposed and which are not surrounded by walls, warm spots encircling frames and crops requiring shelter may be provided by having the rows to form three sides of a square, the other side being open to the south. In this enclosure ridge Cucumbers, Vegetable Marrows, Tomatoes, and other crops or plants requiring shelter will have substantial assistance afforded them by the Beans, and the latter will be as good, perhaps better, than if grown in quarters of several rows together. These squares are also useful in such gardens for prolonging the use of late crops in autumn, as Cauliflowers, Lettuce, &c., and especially if the sticks and dead Beans can be tolerated to remain for some time after the latter have been destroyed by frost, for even if destitute of live foliage the rows will afford important sheltering aid against high cutting winds. When the rows are thus arranged singly it is advisable that the Beans be sown much more thickly than is usual. The ordinary practice is to sow in double rows about 4 or 5 inches apart, the Beans being 3 or 4 inches distant in the rows. These distances are sufficient when several rows are grown together; but when the rows are sown singly, and especially with the object of affording shelter, the Beans may preferably be sown double or more than double the thickness named. For instance, if a trench a foot wide is formed, and in this trench the Beans are placed about 2 inches apart, or say twenty-five Beans to each foot of trench, and if half of these are topped when a foot high and a double row of sticks are used, the shelter will be more perfect, and not only that but the rows will yield many more pods than if they were thinly sown.

It is of the greatest importance that the sticks be placed to Scarlet Runners before they commence forming twiners, for if these are permitted to coil round each other they cannot be untwined, neither do they afterwards take to the sticks freely.

Generally the Beans are sown on the level and the rows earthed-up, but in dry districts especially the system of sowing in trenches prepared and manured similarly to trenches for Celery is greatly to be preferred. In these hollows water can be effectively poured to the roots, which is not the case when the plants are growing on longitudinal mounds. Rows in trenches will during a hot summer yield more than double the produce over rows sown on the level.—R. FISH'S PUPIL.

MESSRS. WEEKS & CO.'S BUILDING FOUNDATION.

EVERY invention which economises space and increases the utility of horticultural structures, and at the same time lessens

miss ventilators; but any other form of ventilators may be adopted if thought desirable. Through these ventilators the air passes, and, as will be seen, comes into immediate contact with the hot-water pipes; thus being warmed before diffusing itself over the house. The front sashes are shown to open in sections by means of ventilating machinery, and the top lights are intended to lift in the same manner. When the border requires remaking or renovating the slate panels can be easily removed and the entire front of the house thrown open, thus greatly facilitating the operation. Another advantage of this form of construction is, that should alterations in the garden render it necessary or desirable to move the position of the house, it can be readily done with much less trouble, expense, and delay, and without the disfigurement consequent upon the removal and re-erection of a structure standing on brick-work.

Messrs. J. Weeks & Co. have already introduced their system with great success at several places, amongst others at the establishments of the Right Hon. the Earl of Onslow, Clarendon Park, Guildford; F. Tagart, Esq., Old Sneed Park, Bristol; Philip Crowley, Esq., Waddon House, Croydon; and at Ley-

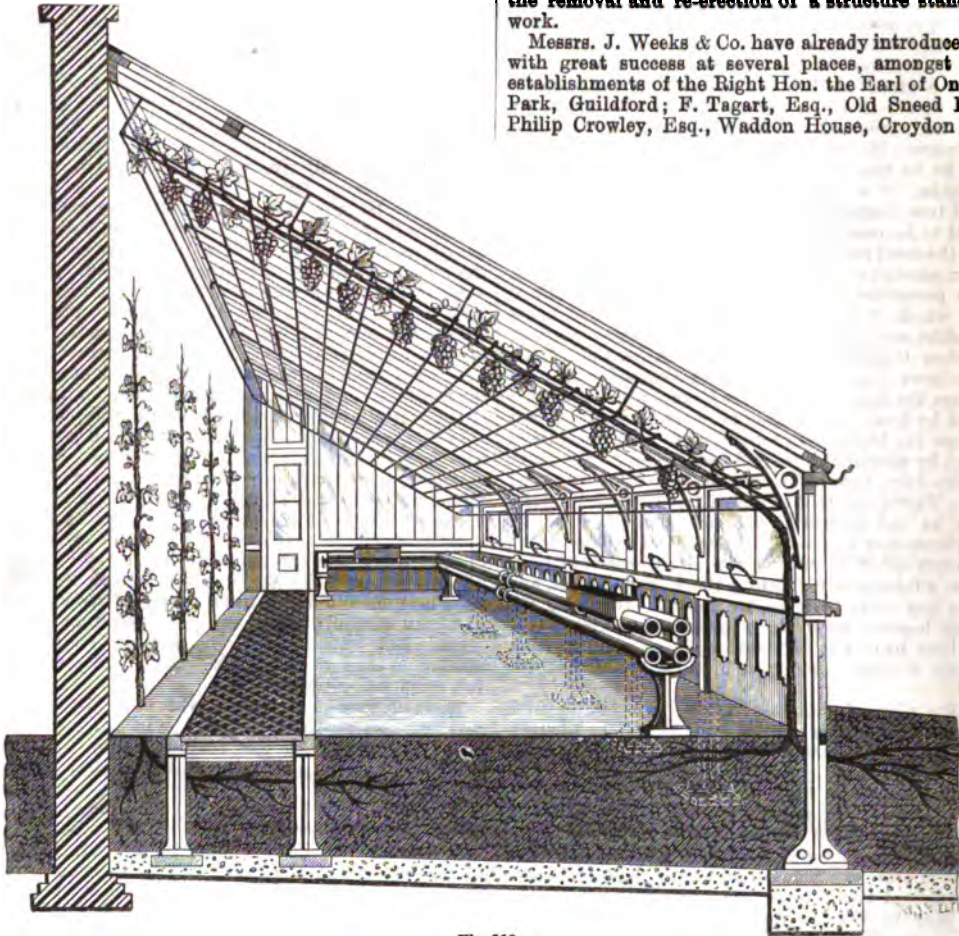


Fig. 112.

their cost, is obviously a great improvement, and one of much importance to all interested in horticulture. This is a characteristic of Messrs. J. Weeks & Co.'s improved form of iron and slate foundations. These foundations, which consist of iron and slate combined in such a manner as to constitute a strong, durable, and economical form of wall, do not occupy anything like the space of the brickwork formerly employed, while they present a neatness and compactness of appearance and possess a facility for alteration which a solid brick wall cannot pretend to.

In order to render the precise nature and value of the invention apparent to our readers we give (fig. 112) an interior view of a vinery constructed in this manner. On reference to this view it will be seen that the wood and glass framing rests upon cast-iron standards (one under each mullion) sunk about 2 feet 6 inches into the ground, and having flanges top and bottom. The top flange is secured by means of stout screws to the wood plate of framing, while the bottom flange stands upon a small block of concrete. The space between these standards is shown as being filled-in with slabs of slate, pierced and so arranged as to form a series of hit-and-

bourne Grange, West Malling, the seat of the late Sir Joseph Hawley, Bart.

CRYSTAL PALACE FLOWER SHOW.

I THINK it must be admitted that this was a most excellent show, and, taking the ungenial weather into consideration, far better than could reasonably be expected. Still after this remark I feel I am justified in saying that to many Londoners it was disappointing, and for this reason: Roundabout the great metropolis there are many hundreds of small gardens which horticultural amateurs delight to cultivate, gardens without any glass on them, gardens where many of our hardy plants would do well. I remember many years ago seeing in three gardens in one road such collections of Auriculas and fancy Polyanthus, that in these after-years has made it pleasurable to see them "in my mind's eye" again and again; and when I read "D., Deal's," notes on the Manchester show of this most beautiful plant, the bright floral vision of my young days glowed again with more than its wonted brightness. Then, too, in old times our little gardens were full of most interesting

herbaceous plants; and now as one looks down from the many railways about London, how few really pleasurable gardens we see. I think one reason is that of the bedding system, and another that the grower of hardy plants has no place to show his pets for prizes of any consideration; therefore, also, our flower shows necessarily to a certain extent only attract those of the class that have either stoves or greenhouses at their disposal, and do not help to create that healthy love of flowers amongst all that every horticulturist wishes to see. I wish it to be distinctly understood that I am not saying anything in the disparagement of tender plants, but that I wish those to be encouraged who have but a small garden and humble means at their disposal.

Take for instance the Auricula. What is more beautiful when well grown? and when I look back to the marvellous specimens I have seen in little back gardens round London, grown often in home-made frames, I am apt to think those were indeed gardening days. At the present moment I do not know of one amateur gardener so occupied. Then how were these represented at the last Palace Show? Why, as far as I could find by a few rather ordinary alpinists. Why don't the Auricula fanciers rally in London and lead on this fancy? It will help to make many a little home happier. The Tulip again was a London fancy. Where is it now? It was represented at the Palace by one tray sent by Messrs. Hooper. Pansies can be grown by all. This firm sent of these a most brilliant lot, some of the colours being dazzling.

Now I will turn to more of our London flowers—the herbaceous. Here only one firm exhibited (Mr. Parker), and very interesting I observed the plants were to many, though apparently they did not seem to have the idea that they were perfectly hardy and could be grown well in their little suburban gardens, and this comes from the now long usage of only, or nearly so, of offering prizes for plants that require heat. Taking the Trollius for instance; I heard the remark, "How beautiful! but of course difficult to grow," as only one or two plants were shown. What I want to see is prizes offered rather freely at these our great London shows for plants that are within the reach of all both as regards price and cultivation. At present the general remark is, "All flower shows are too much alike," and so they are to the general eye. There are the same crinoline Azaleas, the same tied-out Roses, the same spread-out Pelargoniums, and Zonals and Tricolors and others of the Geranium type. These I own there are many lovers of, and deservedly so, but the multitude cannot grow them; if they could there would be a multitude more to admire them. If there are classes at these shows that every one who has a garden can compete in, I feel certain it will give an interest in floriculture that it now lacks—that of the multitude. Why cannot we rival the Auricula growers of the north, the Gooseberry growers, &c.? I believe the only reason is and has been the want of encouragement to anything that does not "bed-out well." I hope ere long to hear that the love of florists' flowers—such as the Anemone, the Ranunculus, the Auricula, the Tulip, the Polyanthus, and others that do not now recur to my mind—has gained a new life, and that they will be seen and admired at our shows, and the delight of and the study of the possessors of the little gardens round London.

Formerly how pleasantly many a one used to talk of his little garden, of the growth of this, the beauty of that; but now the "bedding-out" fever is raging, and one seldom hears a word.—HARRISON WHEAT.

COTYLEDONS—NAVEL OR PENNY WORTS.

THIS is a small group of interesting plants seldom met with in cultivation, and are mostly sought after as rarities by the collector of choice plants; but when they find their way, which they ought to do, into more general cultivation they will be better appreciated. They are found in different countries, but we claim one at least of the family as our own—*Cotyledon umbilicus*, and on Toffield's authority *C. lutea* also. The former kind is a most interesting plant when met with in its native home in some of our south-western counties, covering old mouldering walls in moist mountainous shady situations. The wonder to me is that these plants have not found their way into more general cultivation. They are looked upon by some to be difficult to deal with under cultivation, but let us first take a lesson out of Nature's book, and then three parts of the difficulty vanishes. Let the same elements be provided for them, and other circumstances being favourable we may then expect to succeed. They require partial shade, good drainage, water when required, and

as pure air as can be had. A little sandy loam and lime rubble, with stones to keep the plants in their places, will be suitable for the *Cotyledons*. Where variety is sought after they may be used as edging plants, but old walls and rockwork are their locale. *C. cymosum* is a graceful and desirable plant, and



Fig. 113.—*Cotyledon cymosum*.

should have a first place in all choice collections of alpine plants.—N.

EARLY FORCING STRAWBERRIES.

I WAS much pleased to see Mr. Anderson's article on early Strawberries in your Journal of May 11th, and am sorry that great pressure of engagements prevented me sooner noticing his practical remarks therein. Mr. Anderson is one of the most skilful forcers of Strawberries with whom I am acquainted, and his probity is such that any opinion from him may be received with the greatest confidence.

The new seedling Amy Robsart had been tested by several accomplished gardeners and pronounced a most excellent forcer; but before issuing this variety to the public and giving a positive opinion as to its merits in this respect, I submitted some plants to the care of Mr. Anderson for his impartial opinion. My own opinion from plants forced this season fully corroborates his in every respect.

Amy Robsart is nearly as early as Black Prince, carries but a moderate quantity of healthy handsome foliage, consequently is not liable to mildew, and bears the largest quantity of even-sized high-flavoured fruit a pot plant can well produce. It behaves equally well out of doors; but it is to good forcing Strawberries that I wish to direct attention, and this is *par excellence* an early forcing Strawberry. Alpha, too, I have every reason to believe will turn out an excellent forcer; and if so, this variety will come in still earlier, making Amy Robsart second, and Early Prolific third. An esteemed friend of mine forced Alpha this season only moderately, and I was surprised at the beautiful colour and high quality of the fruit. It is not everyone, however, who will take the trouble and who knows how to force Strawberries like Mr. Anderson, and I hope next season

he will take Alpha under his charge and give us the benefit of his candid opinion as to its merits or demerits as placed against the above varieties. Both Alpha and Amy Robsart I should now mention are seminal varieties of Marguerite (Lebreton), having when well grown a distinct trace of the Hantbois, not so large and coarse as the parent, but large enough, higher in colour, and superior in flavour and productiveness; for with me Marguerite became almost barren.

Your readers will I am sure, as I do, thank Mr. Anderson for his useful hints as to pot culture, and if with his method they will take in hand the above sorts and follow them with the handsome Duke of Edinburgh and Execlior, they will not require anything better or more easy of culture. Execlior possesses, without exception, the highest flavour and the best quality under glass of any Strawberry I know. It is, of course (as a late variety out of doors), later than the above, but it is as firm and buttery as Carolina superba, and as sweet and piquant as Dr. Hogg. When speaking of Amy Robsart I ought, perhaps, to inform your readers that this seedling cannot, I fear, be sent out till next year. My gardener considers himself pledged to issue Execlior, and possibly Bonny Lass, two late sorts, in August next; meanwhile the stock of Amy Robsart, which at present is very low, will be increasing for the following year, together with Hundredfold, another immense cropper from the Marguerite class.

Mrs. Laxton, a hybrid between Alliance (Laxton) and *Fragaria tardissima* (Roden), is in preparation, and I hope will be found to open up a new strain, as did La Constante when its eminent raiser (De Jonghe) issued that famous variety to the fragarian world. I take this opportunity also to mention that Variegated Enchantress is also doing well considering the tantalising winter to the Strawberry crop in general, and gives me great hopes of being a bearer of high-glass fruit.

So much for some of the numerous novelties I have yet in store at Morningside.—W. B., Kidderminster.

THE POTATO DISEASE.

In the last number of the Royal Agricultural Society's Journal there is an essay by Professor A. de Bary, of the University of Strasburg, on the Potato fungus, which contains information that may be interesting to some of your readers. Part 1 of the essay is devoted to describing the difference between *Cystopus*, *Peronospora*, and *Phytophthora*, the latter being the family to which the writer assigns the Potato fungus, and calls it *Phytophthora infestans*. This part of the essay bristles with scientific terms, so much so that I expect few readers of the Agricultural Journal will trouble to find out the difference between conidia and conidiophores, and oogonias and oospores, &c., and in the other parts of the essay, too, there is a pretty free use of them. Part 2 is devoted to the phenomena of the growth of the *Peronospora*. Part 3 to the life history of the Potato fungus. Parts 4, 5, and 6 are a continuation of the same. Part 7 to the occasional appearance of other fungi. Part 8 is devoted to an examination of the discoveries of Mr. Worthington G. Smith. Part 9 is a continuation of the same subject. Part 10 is on the hibernation of the Potato fungus. The last part is, I think, the only one which will be of any practical use to your readers.

With regard to the spread of the Potato disease the author says, "In large stores of Potatoes we often find that some are diseased—that is, containing the living mycelium of *Phytophthora*. It cannot be disputed that the living fungus may occasionally be introduced into the field through planting such diseased tubers. I do not say that this happens largely, but even if it never happened the fungus might still quite unobserved get into the fields by means of diseased tubers, because as already has been said, the mycelium in the tubers forms conidiophores directly it is placed in a moist atmosphere, and such a condition is present in the usual temperature of spring. This may be easily seen in fresh sections, or on the injured surfaces of a diseased tuber. In moist store-rooms the conidiophores (branches bearing offsets), may burst their way through the unbroken skin, and particularly through the eyes. Should this occur even on one Potato in one store-room or cellar, it is clear the conidia (offsets), will find their way to other Potatoes and attach themselves to them. If these quite healthy tubers should then be planted in the ground the conidia will germinate, the germs penetrate some of the tubers, and the mycelium develop itself in them. All this is obvious from simple experiments which have been well known for a long time." It may be the fact that all this has been known some

time, but if so it certainly has not been brought forward with sufficient prominence. It only shows how very careful people ought to be in selecting their seed Potatoes, and never to keep any for seed from a patch which is the least tainted with disease. These facts would certainly account for the disease suddenly appearing in a field far away from any garden, and also the comparative freedom from disease of new sorts of Potato when they first come out.

Although the spread of disease in this way appears to have been well known, it was not until last year that the author was able to satisfy himself of the fact by his experiments. "In March, 1875, about fifty healthy Potatoes were inoculated at the eyes by fresh conidia. No exact test was applied to ascertain whether the infection had taken place; the result, however, showed that it had succeeded in most cases, though not in all. On the 2nd of April the tubers were planted in common garden soil in a box without a bottom, and open to the air—that is to say, in a miniature garden, which in order to be more easily looked after was thus fenced-in. The tubers sent out shoots in a normal manner, many, even of the specimens known to be diseased, producing undoubtedly healthy foliage. One (a red Kidney) was specially distinguishable from the rest, because the six shoots which it sent above ground remained in a wretched condition. On May 13th these shoots had become brown. I cut off one for microscopic examination, and found the living fungus in it. The presence of the fungus in the tuber was afterwards confirmed. The other five shoots were left, and up to the 17th remained unchanged without any appearance of conidia. On the following night a warm heavy rain fell, and on the morning of the 18th the stalks and petioles of the five shoots were thickly covered by conidiophores with mature conidia. On the healthy foliage of the other plants there was no trace of the fungus as late as the 20th; but on the morning of the 21st two leaflets on the upper part of a branch which was near the five sickly shoots presented the characteristic spots of the *Phytophthora*, and on the lower surface of the leaf where these spots occurred conidia were produced; no further indications of the disease were visible to the naked eye. From May 25th onwards the fungus spots were to be seen plentifully scattered without order on the stalks, petioles, and leaves of the plants. About the same time several other diseased tubers gave off small shoots, into which the mycelium of the fungus had passed from the tuber; no further observation, however, was made on them, because the disease was far advanced everywhere. Most of the shoots were still quite healthy at their base. They could not therefore have received the infection from their tubers, but it could only have come from the conidia produced on the five diseased shoots. To remove all doubts on this point several shoots were entirely dug up and closely examined in all parts. Two red Kidneys had the old tuber still turgid and altogether free from fungus; the base of the shoots was likewise entirely free from the fungus, while in the upper part the fungus spots existed in abundance. During all this time to the end of May there was nothing remarkable in the weather; it was in general moderately moist."

From the foregoing remarks it would appear to be quite possible to very much reduce the ravages of the Potato disease by selecting seed from patches which show no signs of disease, and planting those in places far away from any others to raise a stock of them in sound condition free from taint. I hope several of your correspondents will at once give the plan a trial.—AMATEUR, Cirencester.

NOTES OF A VOYAGE TO BUENOS AYRES.

We arrived at Madeira on the 8th of November. We anchored in a beautiful bay, on which is built Funchal, the principal town of that magnificent and fruitful island. We were soon surrounded by numbers of small boats loaded with a miscellaneous collection of articles, the owners anxious to dispose of them to the best advantage amongst the passengers. When we were informed that the ship would remain a few hours to coal several of us lost no time in making for shore, and at once set about to employ our time to the best advantage. We were conveyed a considerable distance into the island in vehicles of rather a novel description, having no wheels, but fixed on sliders and drawn by two or more bullocks, according to the acclivity of the streets, which in some parts seemed almost perpendicular, and four bullocks had quite enough to do to draw their light sledge containing four passengers. Horses can also be had for those who prefer them, and it is

rather amusing to see the groom or attendant running behind holding on by the animal's tail, ready to receive the reins when the rider dismounts.

After two hours' journey we alighted from our chariots in front of a convent, from where we had a magnificent view. The town with the beautiful bay lay immediately at our feet, and to the right and left of us extended large vineyards and sugar plantations, interspersed with beautiful villas and gardens. I had a ramble in the woods, and had time permitted could have made a fine collection of Ferns and other familiar *hothouse* plants. Our return journey was made in conveyances slightly differing from those in which we made our ascent, being only wicker chairs fixed on sliders, and propelled by a stalwart Portugee from behind. We halted in front of one or two private gardens, to which, by the kind permission of the owners, we were admitted. At that season the Camellias were in full bloom, and to see the enormous trees with hundreds of blooms was a treat one seldom has the opportunity of enjoying. *Taesonias*, *Bignonias*, *Bougainvilleas*, and numerous other delicate climbers took my particular attention. They were neatly trained round the verandahs. I shall always remember my visit to Madeira, where, feasting on the glorious sights, I enjoyed a few of the most pleasant hours of my life.

We reached Rio de Janeiro about eight o'clock on the evening of the 22nd, but had to drop anchor outside the forts, as no vessel is allowed to enter the harbour after sundown; so early on the following morning we had the privilege of enjoying the delightful scenery while steaming slowly up to the anchorage in front of the city. Rio Janeiro is generally allowed to have the finest and largest harbour in the world; I should say few could excel it for natural grandeur. We remained there a day and a half, during which time I had a run through the Botanic Gardens and round the suburbs of the town. The gardens are remarkable for their fine avenue of Palms. On my return from the gardens I had the opportunity of experiencing a tropical storm; but on the following morning I was amply repaid for any little inconvenience it caused me. It was a lovely morning, and the verdant hills, clad with their foliage of countless hues, with Bananias and stately Palms standing out in bold relief, were so fresh and gay that, contrasted with their parched appearance previous to the rain, all nature seemed combined in returning thanks for the refreshing element. I was up betimes, continuing my rambles round the villas, in the gardens of which I saw fine collections of flowering and foliage stove plants. I was sorry my time was so short, having to hurry on board, being uncertain at what hour the "Oibers" would sail. We got under weigh about noon, and leaving the stately "Sugar Loaf" behind, were soon again out in mid ocean. Four days after we arrived at Montevideo, where we were at once put into quarantine, owing to yellow fever being prevalent at Rio Janeiro. We continued our voyage up the River Plate, and finished our quarantine in the roads in front of Buenos Ayres.

On the 8rd of December we were released, and soon reached *terra firma*. A few days after my arrival I engaged with the late Mr. Wanklyn, who had just built a large mansion, to lay out the gardens and grounds surrounding it. I was kept hard at work for six months, at the end of which I had everything trim and each department in working order. I feel rather flattered now, as everyone admits them to be the best and most practically designed gardens in Buenos Ayres, and for neatness and order they are excelled by none. The shrubberies have a very fine effect now. Some of the *Acacias*, *Ocuaninas*, and *Conifers*, although none exceeded more than 2 feet high when planted, have now attained from 24 to 30 feet in height. All the varieties of the *Eucalyptus* grow luxuriantly, but the tender points of young plants are liable to be injured by frosts in winter. In another year the fruit department will produce any quantity of fruit, as the *Apricots*, *Plums*, and *Pears* will be in a fruit-bearing state. These last two years the *Vines* and *Peaches* have produced abundantly. The flower garden this year has been the envy of everyone. From the plants I brought with me I have propagated a large stock, and have been able to go into bedding on a large scale with fine effect. I was highly complimented a few days ago by a gentleman who has just returned from England, and where during the summer months he visited several gardens, amongst which he saw none to excel this for neatness of arrangement. I have still remained here, but during the first eighteen months I laid out several gardens and constructed a few conservatories; but as the

fatigue and exposure to the excessive heat was telling on my health I was compelled to give such work up, and since then I have given all my time and attention to improving the gardens and grounds of my first employer. I regret very much that just as I have overcome most of the difficulties attending one's settlement in a foreign country and established my reputation in a professional point of view, that I am prevented by falling health from taking advantage of my experience. I am sorry to inform you that Mr. Wanklyn died last June after a long and painful illness, deeply regretted by all the native and foreign community, and none can regret his demise more than I do, for he was a kind and indulgent master and a great enthusiast in horticulture. Shortly after his death Mrs. Wanklyn and family returned to England, unfortunately in the ill-fated S.S. "Boyne," which you would observe in the newspapers was totally wrecked near the coast of France. We were very thankful to hear they all escaped with their lives. I am at present left in charge of the house and grounds until affairs are arranged.

The climate of Buenos Ayres is generally considered healthy, but at times the weather and temperature is liable to sudden and extreme changes. I have remarked a variation of 40° Fahrenheit within twelve hours, and one day last summer the thermometer registered 95° in the shade and 115° in the sun, while next day there was a severe hailstorm, the stones being of enormous magnitude. It is also subject to long and severe droughts, sometimes extending over five or six months, during which times breeders have often to drive their flocks and herds for leagues into the Indian territories in search of pasture and water; while in other years wet seasons set in and the pasture grows so luxuriantly that it falls down and rots the roots of the parent plants. But we must consider these as exceptional years. Taken as a whole the country is well adapted for sheep and cattle farming, the produce of which is the great staple of the country, hides, wool, and grease being the only exports.

Agriculture has been tried in several provinces, but as yet with little success, except within a few leagues round Buenos Ayres and in the province of Santa Fé. The greatest enemies to agriculturists are the locusts, which come in such swarms as to strip a farm bare in a few hours. In the province of Mendoza wine has been produced with tolerable success. The resources of this country are unlimited if there were only capital and energy to work them out. No doubt there is a fine future before us if Government would only stir themselves and foster immigration, and assist and protect immigrants when they do arrive. It is the continual party broils and the aggrandisement of the parties in power which keep the country in such a wretched backward state. Our poor neighbouring republic Uruguay, the finest agricultural country in South America, is completely ruined from being in a continual civil war. No private individual cares to invest his capital in stock when at any time marauders may come and clear off the whole.

The soil here is composed of a rich black vegetable deposit varying from 1 foot to 2½ feet deep, and produces enormous crops. The market of Buenos Ayres is supplied with fruit and vegetables by Italian gardeners, who grow the vegetables under a system of irrigation. In the "chacras," or small farms near the city, and along the railways, Lucerne is grown extensively for hay, of which four splendid crops can be had in one year. This year the small piece I have has already produced two crops, and is again almost ready for cutting. Maize is also grown abundantly, but I think its culture might be extended greatly with profit, as it is a very bad season when it is a failure. Potatoes produce two crops a-year. The first crop is already taken up, and now is the time for planting the second; but they are very liable to be attacked by a large insect called here the "Bicho Moro," which eats the tops to the ground in a few days. I have no doubt but in time this will also be a great Wheat-producing country, for as the ground is cultivated it will tend to shorten the dry season. What ought now to be done is to plant large forests, selecting useful varieties of trees for timber suitable to the climate; but they hold here the same opinion as Pat, who thought as posterity had done nothing for him he had no right to do anything for posterity. In the upper provinces, where the ground is more undulating, the country is fairly wooded; but in the province of Buenos Ayres you may ride leagues and leagues and never meet with a tree, except occasionally a solitary "Omber," a variety of *Phytolacca*, under which is generally pitched a "puesteros" ranch. I intend when I can find it convenient having a run into the

camp, so I will be able at some future time to give you my opinion of the Pampas. I intend also in a future letter giving you a description of plants most useful for forming shrubberies, &c., and a few practical notes in general.

I see from the papers you are having a very severe winter, and also stormy weather round the coasts. What a contrast to what we are at the present time enjoying here! On New-year's day the thermometer registered 95° in the shade, and since then and for a week or two previous to new year the maximum has ranged from that point to 80°. The evenings are very agreeable, but while writing this the mosquitoes are laying siege to me from all directions.

Some of the foreign gentlemen here were trying at one time to form a horticultural society, but failed. There was a sort of a flower show held last autumn in connection with an agricultural exhibition got up by the Rural Society, the first that has been held for twenty years. I see another is advertised to take place in September.—GEORGE BROWN.

[Similar letters would be welcomed.—EDS.]

THE AURICULA IN YORKSHIRE.—No. 2.

BEING anxious to see other collections of Auriculas I had arranged to go by Halifax and Roshdale, but found it necessary to alter the arrangement, which led me to

Sheffield, where there is also a large and well-grown collection of Auriculas and other florist flowers. I was directed to Rough Bank, and found Mr. Benjamin Simonite at home. Mr. Simonite is a working cutler, and, like many of the operatives in the midland and northern counties, he devotes his spare hours to the culture of florist flowers, and what he has undertaken to do he has done thoroughly and well. The Auriculas at the time I saw them were arranged in a small span-roofed greenhouse with a path in the centre and stages on each side. It is thoroughly ventilated, and light canvas is used to shade the bloom from the sun. It would not be safe to say whether Mr. Horner's plants or Mr. Simonite's were in the most healthy condition, both collections are admirable examples of skillful culture. Mr. Simonite has had many difficulties, but step by step he has pressed forward and overcome all obstacles. In the first place the atmosphere of Sheffield is loaded with sooty particles sufficiently thick to obscure the sun at noonday, glass and leaves soon becoming covered with them. Then good potting material is difficult to be obtained, and altogether when we hear of the difficulties we admire the man and wonder at the result.

The same sorts are grown here that are grown at Kirkby. Amongst other rare sorts Prince of Greens was pre-eminent, a splendid truss, had fifteen pipes; seven had been cut out, leaving eight perfect flowers. Talisman (Simonite) is a noble green edge; the flowers are very large this year, but the paste is scollopy. The true variety of Lovely Ann (Oliver) is grown at Rough Bank, and when at its best holds a higher position than is usually accorded to it. George Levick (Walker) is a first-rate novelty; it partakes of the character of George Lightbody and Charles E. Brown, and may be said to stand midway between the two. Peveril of the Peak is another of Walker's flowers, but this partakes more of the character of Hero; it is also a very fine grey. A characteristic of Mr. Walker's flowers is, that the pipes are apt to cup, and not open-out kindly unless the weather is warm. Samuel Barlow (Simonite), is a good new flower of the Hero type, but quite distinct from that good old sort. Some good white-edged flowers in this collection not already noticed are Mrs. Headly (Lightbody), a fine and distinct flower; Gairn's Model was also in very fine order, and John Simonite here had a narrow white edge very pure; at Mr. Horner's the edge was much broader and it did not look like the same flower. Campbell's fine crimson self, Lord Lorne, was also very fine here. It is a flower of which any raiser may well be proud.

Mr. Simonite has about the same number of seedlings as Mr. Horner, and amongst them there is a grand offer, better, indeed, than Mr. Horner's crimson. It is a deep violet-purple self, the flowers of which are very large and perfectly circular, they are also of good substance; the foliage is also very attractive, being very neat, yet large and of good substance.

Although Auriculas are well grown in the little garden on the bare hillside at Sheffield, and although I would not have grudged a journey all the way from London to see them alone, this is not the only plant cherished by Mr. Simonite. Here may be seen some thousand or more plants of Carnations and Picotees, grown in pots and cultivated in the open ground;

and these fine flowers have a history of their own. They are nearly all seedlings raised by Mr. Simonite. He has brought in nearly all the new sorts by other raisers, and one by one they have had to give place to his own seedlings. He has been working on them for very nearly thirty years, crossing and recrossing; but before beginning to work for colour he first aimed at the formation of the flower—breadth and smoothness of petal was his groundwork. Number of petals, which constitutes fulness of flower, he does not desiderate; about twenty-four petals he considers sufficient. Such a number of petals as is to be found in Guardsman Carnation and Admiration Picotee, in his estimation tends to confusion or coarseness. With Mr. Simonite the raising of these flowers has been a labour of love. He has very little leisure time, and his work is very laborious, requiring considerable muscular exertion. It has been done by rising early and sitting up late; by working steadily for one end and aim—not by fits and starts as many florists do, who begin to look to their flowers a month or two before the flowers open, and who treat them with comparative neglect for the greater portion of the year. But Carnations and Picotees claim attention all the year round; no sooner is the flowering period over than it is time to layer the grass. When well rooted the young plants must be taken from the parent and repotted. Then comes the cold damp days of autumn and winter, and the frames require daily attention. Air must be admitted judiciously, and watering carefully attended to. In spring the cultivator's vigilance must be increased to prevent that dangerous enemy "spot" from attacking the most cherished sorts. Then in March the plants must be placed in their blooming pots or planted out. Green fly will attack them, and until the flowers open again, what with sticking, tying, and other attentions there is plenty of work to do. But Mr. Simonite finds time not only for all this, but to raise thousands of seedlings, and he has in this branch alone written for himself a name in the history of this flower that shall not soon pass into oblivion, and is more worthy of remembrance by the lovers of the gentle craft than the names of heroes and statesmen. Tennyson's lines recurred to my memory at this time—

"Trust me, Clara Vere de Vere,
From you blue heavens above us bent
The good old gardener and his wife
Smile at the claim of long descent.
However it be, it seems to me
'Tis only noble to be good.
Kind hearts are more than coronets,
And simple faith than Norman blood."

The best flowers are not yet before the public, but those that are hold the highest position. I have not yet seen any of his Carnations, but William Summers is a fine red-edged Picotee; Mary, light, and Mrs. Summers heavy-edged purples, are the best in the class; but Mr. Horner, who has either seen or grown most of his flowers, considers that in all the classes he has improved on previous flowers, and not only so, but in some instances he has revolutionised the class. In the Picotees he has the pure white ground without spot or bar, and the well-defined edge; but enough has been said to show the wonderful perseverance of the man. Then he has large beds of the gorgeous Tulip, which likewise requires a rich soil and the careful hand of the gardener. Its fragile blossoms must be sheltered from sun, wind, and rain by a proper tent to admit the owner underneath its ample covering. I have now only to thank both Mr. Horner and Mr. Simonite for the kind and hearty way in which I was received and shown their fine flowers.—J. DOUGLAS.

ROYAL BOTANIC SOCIETY'S SHOW.

MAY 24TH.

THIS, the first summer show, was held in the large marquee, from the hollow central ground of which the rising banks of plants had an imposing effect—an effect, however, somewhat formal by the preponderance of symmetrically-trained stove and greenhouse plants and pyramidal Azaleas. A more free intermingling of Palms, Ferns, and fine-foliated plants would have added to the attractiveness of the Exhibition. The plants were generally admirable specimens, and in their arrangement there was a refreshing absence of overcrowding, and the collections could be seen and enjoyed to the best advantage. Amidst the mass of colour a fine relief was afforded by a group of *Acer polymorphum* in several varieties from Messrs. Veitch & Sons. This bank was fringed with Orchids and new plants. Opposite to Messrs. Veitch's plants an excellent collection was arranged by Mr. Laing, Stanstead Park Nursery, the new Bicolor *Pelargoniums* and *Caladiums* being very conspicuous. The majestic

Roses from Slough and Cheshunt were, as usual, striking by their vigour and perfectness. In the front of these were six boxes of very fine out Roses, a brilliant group of Zonal Pelargoniums, and baskets of the pure white Mont Blanc and Mountain Maid Variegated Geraniums from Messrs. Paul & Son, Waltham Cross. We now briefly glance at the classes.

In the nurserymen's class for twelve stove and greenhouse plants Messrs. Jackson & Sons, Kingston, were first with a really fine collection, the same as exhibited at the Crystal Palace, the plants averaging 5 feet in diameter; Mr. B. S. Williams being second with plants in admirable health and bloom but smaller than the above. The same exhibitors occupied the same positions for six plants. In the corresponding amateurs' class for ten plants Mr. Ward, gardener to F. Wilkins, Esq., was first with a highly superior collection. *Statisia profusa* was 5 feet in diameter; *Genetyllis tulipifera* a perfect globe of the same size; a grand example of *Anthurium Scherzerianum*, and other remarkably well-grown specimens. Mr. Chapman, gardener to R. Spode, Esq., Hawkesyard Park, was second with a good collection, including a superior specimen of *Erica odora rosea*, a plant as sweet as it is beautiful; Mr. Toms, gardener to H. Wettenthal, Esq., being third with smaller but healthy plants. In the class for six plants (nurserymen) Messrs. Jackson & Sons, Kingston, had the first place with very large plants, the same which were successful at the Crystal Palace; second honours going to Mr. B. S. Williams, his collection including *Azalea Diana* 7 to 8 feet in diameter, and a good *Erica tricolor* *Willsonii*. In the corresponding amateurs' class Mr. Spode was first with very large and well-bloomed plants, including a fine *Anthurium Scherzerianum*, *Chorozema Chandlerii*, *Dracophyllum gracile*, *Clerodendron Balfourii*, and *Erica Cavendishii*; Mr. Ward being placed second, his group including a grand *Erica tricolor impressa*, his gigantic form of *Anthurium Scherzerianum*, a good *Genetyllis*, *Aphelaxis*, &c.; Mr. Strahan, gardener to P. Crowley, Esq., Waddon House, Croydon, having the third place. The plants exhibited in the above classes were generally of a high order of merit.

Orchids.—In the amateurs' class for six plants there were six competitors, and many splendid plants were exhibited, the result being that Mr. Ward won the premier position, Mr. Denning being second; Mr. Loveland, gardener to J. Hepburn, Esq., Sidcup Place, Kent, third; and Mr. Heims, gardener to A. Philbrick, Esq., fourth. Mr. Ward's group included *Cypripedium Stonei* with thirty flowers, a splendid example of *Odontoglossum vexillarium*, an equally superior specimen of *O. Phalenopsis*, and other good plants. Mr. Denning had *Vanda teres Andersonii*, distinct and beautiful; *Dendrobium Bensonii* profusely bloomed, and *Cattleya* extremely fine. Mr. Loveland had in his collection *Cypripedium caudatum* with ten blooms, remarkable not only for their size but for their unusually rich colour; and Mr. Heims had a noteworthy example of *Phalenopsis Luddemanniana*, three plants with twenty brilliantly marked flowers, a good form of *Odontoglossum Roezlii*, *Sobralia macrantha*, &c. In the corresponding nurserymen's class Mr. B. S. Williams was first with a very rich group. *Vanda tricolor insignis*, *Lælia purpurata*, *Oncidium sphacelatum*, and *Cypripedium barbatum superbum* were remarkably fine. Messrs. Jackson & Sons, Kingston, had the second place with a nice collection.

Roses.—For six plants (nurserymen), Mr. Turner, Slough, and Messrs. Paul & Son, Cheshunt, staged magnificent collections. Edward Morren (Mr. Turner's) and Beauty of Waltham (Messrs. Paul's) were triumphs in Rose culture. The Slough Roses had the finest blooms and foliage, the plants being rather more thinly trained than those from Cheshunt; hence Mr. Turner won, Messrs. Paul having the second place. It is noteworthy that Mr. Turner exhibited Roses the same day at Tiverton, and also supplied plants for the banquet of the Drapers' Company, thus evidencing the resources of his nursery.

For twenty Roses in 8-inch pots Mr. Turner's plants were again more thinly trained, but the blooms were magnificent, especially of J. S. Mill, Etienne Levet, Edouard Morren, and Madame Lacharme. Rev. J. B. M. Camm was also extremely fine. The plants had from eight to twelve blooms on each, Messrs. Paul's having from twelve to twenty flowers on each plant. The prizes were awarded in the order named. For six Roses in pots (open) Messrs. Paul & Son were the only exhibitors; they set up really grand specimens and had the first prize.

Hardwooded plants.—For six *Azaleas* (nurserymen), Messrs. Jackson & Sons had the first place with large, healthy, and well-bloomed obtuse pyramids, 4 feet through at the base and 5 feet high; Messrs. Lane & Son, Berkhamstead, being second with perfect pyramids 5 to 6 feet in height, rather thin yet well bloomed; and Messrs. Outbush & Son third with smaller plants in excellent varieties, Jean Verschaffel and Madame Verschaffel being very superior. In the amateurs' class for six plants Mr. Wheeler, gardener to Sir F. Goldsmid, had obtuse pyramids 5 feet high, some of them remarkably well bloomed. He had the first prize. For six plants in 12-inch pots Mr. Ratty was

first and Mr. Wheeler second. Twelve *Azaleas* in 12-inch pots.—Mr. Turner, Slough, was placed first for excellently bloomed standard plants of the superior varieties which have been previously noticed; Messrs. Jackson & Sons, Kingston, being second, and Messrs. Ivory & Son third, an extra prize being awarded to Messrs. Lane & Son. The *Azaleas* were numerous, but were not of superior merit.

In the nurserymen's class for twelve *Heaths* Messrs. Jackson & Sons were the only exhibitors; the plants not only being small, but thin. In the corresponding class for amateurs Mr. Ward was first with plants ranging from 1 to 3 feet in diameter; Mr. Legg, gardener to S. Ralli, Esq., being second with medium-sized healthy young plants; and Mr. Wheeler third. In the class for six *Ericaceous* plants (nurserymen) Messrs. Jackson & Sons staged capital specimens 3 to 4 feet in diameter, the best being *Erica tricolor speciosa*, *E. ventricosa grandiflora*, *E. tricolor impressa*, and *E. ventricosa coccinea minor*. In the amateurs' class Mr. Ward was first with a good group of *Ericas*, the two smallest plants, *E. profusa* and *E. ventricosa coccinea minor*, being the best in the collection. Mr. Wheeler was third with small plants. The *Heaths*, like the *Azaleas*, were not as a rule superior, and we pass to a better class.

Pelargoniums.—In the open class for nine plants in 8-inch pots Mr. Ward exhibited marvellous specimens 4 to 6 feet across, perfectly trained (few sticks being visible), and splendidly bloomed. He had the first place; Mr. James, gardener to W. F. Watson, Esq., Redlee, being second with excellent specimens but not quite in perfection; Mr. Turner being third with smaller but admirably grown plants, the blooms being very superior. The varieties comprised *Ruth*, *Pompey*, *Mabel*, *Countess*, *Emily*, *Prince of Prussia*, *Prince Leopold*, *Claribel*, and *Isabella*—an excellent selection. For six plants (amateurs) Mr. Weir, gardener to Mrs. Hodgson, Hampstead, staged healthy plants with good blooms, and was awarded the first prize.

In the nurserymen's class for six exotic Ferns Mr. B. S. Williams was the only exhibitor. He had a good group, including his grand example of *Gleichenia semi-vestita*, and received the first prize. In the amateurs' class Mr. Ritchie, gardener to R. H. Prince, Esq., Hampstead, was placed first for a good group, including a splendid plant of *Davallia Mooreana* 6 to 7 feet over, and a good *Adiantum farleyense*, &c. Mr. Wheeler had the second place for small yet well-grown specimens.

Six fine-foliaged plants (amateurs), Mr. Legg had the first place with a fine collection. *Geonoma pumila*, *Stevensonia grandifolia*, *Dracena Shepherdii*, *Alcascia Lowii*, and *Crotons* *Weismannii* and *Johannis* were all highly superior. Mr. Hill, gardener to H. Taylor, Esq., Avenue Road, Regent's Park, was second with a very large *Pandanus utilis*; *Yucca aloifolia variegata*, *Cycas revoluta*, *Dasylium acrotrichum*, &c., being also of large dimensions; Mr. Strahan, gardener to P. Crowley, Esq., Waddon House, Croydon, being third with a capital collection comprising *Calamus fissus*, *Rhopala corcovadensis*, *Phormium tenax variegatum*, and *Crotons*. An extra prize was awarded to Mr. Ritchie. In the nurserymen's class Mr. B. S. Williams had *Pandanus Veitchii* and *Gleichenia spelunca*, a large *Maranta Veitchii*, and immense *Crotons*, and secured the first prize; Mr. Ley, Croydon, being second with a capital *Cocos Weddelliana*, a good *Pritchardia pacifica*, and a large *Cycas circinalis*, &c.; Messrs. Outbush & Son, Highgate, being placed third for smaller yet not less healthy plants.

In the class for twelve *Agaves*, *Yuccas*, and *Cycads* (open) Mr. B. S. Williams was the only exhibitor, and he staged an admirable collection including *Zamia Lehmannii*, *Cycas intermedia*, *C. Normanbyana*, also *Agaves geminiflora filifera*, *Ghiesbreghtii obscura*, *Taylorii*, and *applanata*—a very distinct and effective group.

For a collection of old-fashioned hardy plants in pots (open) Mr. Roberts, gardener to W. Terry, Esq., Peterborough House, Fulham, was the only exhibitor, and received the first prize for an inconspicuous collection. Some excellent miscellaneous collections were exhibited, and extra prizes were awarded. Messrs. Veitch, Laing, Legg, and Wheeler had prizes for stove and greenhouse plants, Messrs. Ivory & Sons for hardy Ferns; Messrs. W. Paul and Son, Waltham Cross, and Messrs. Paul & Son, Cheshunt, for superior out Roses; and Mr. Hooper, Bath (or if he had not he ought to have had), for a fine collection of Pansies, than which few collections in the Exhibition were more distinct and effective. Excellent Black Hamburgh Grapes were exhibited by Mr. Robins, gardener to E. Dyke Lee, Esq., Hartwell House, Aylesbury; also Victory of Bath Melon. Botanical first-class certificates were awarded to Mr. Ley for *Aralia Veitchii gracillima*; to Mr. B. S. Williams for the same, also for *Photinia serrulata variegata*, *Araucaria Goldiana*, and *Cycas intermedia*; to Messrs. Veitch & Sons for *Aralia Veitchii gracillima*, *Croton Maccaffeanus* and *C. Mooreanus*, *Eulalia japonica*, *Phyllanthus roseum pictum*, *Rhododendron Queen Victoria* and Duke of Edinburgh, *Bollea Lalindei*, and *Cypripedium selligernum*.

Floricultural certificates were awarded to Messrs. E. G. Henderson & Son for *Mimulus* and double *Cinerarias*; to Mr.

Smith, Hornsey, for double *Pelargonium Wonderful*; to Mr. Laing for *Caladium Madame de Devanage* and for *Bicolor Pelargoniums Exquisite* and *J. Jenner Weir*; also to Mr. Hooper, Bath, for *Pansy Jupiter*; Messrs. Paul & Son for *Rose Magna Charta*; and to Messrs. Veitch and Mr. Turner for *Asalea Jean Vervaeke*.

NOTES ON VILLA AND SUBURBAN GARDENING.

KITCHEN GARDEN.

Sow a good breadth of Turnips for early autumn use. Select a piece of ground large enough for two crops, the next one to be sown in about three weeks' time. Our early Turnips are growing well between the earliest batch of spring-planted Cauliflowers, where the soil is of the best in the garden. The Cauliflowers from under hand-lights have been liberally supplied with water, and sometimes with liquid manure. Sow at once a small quantity of Cauliflower seed for an early autumn crop, and do not in planting-out neglect to give the plants a rich deeply cultivated soil to grow in; an open quarter in the garden is preferable to a hot sunny border as this season for Cauliflower plants.

If Onions are forward enough let some of the best of them be pricked out; these, if taken care of, often grow out as well as the plants which are sown in drills. Take care that the plants are not planted deeper than they were when taken up, and again take care to thin-out the remainder before they grow too large. The Onion being a vigorous-rooting plant injury is likely to be done to those left if thinning is delayed too long.

Asparagus is later this year than usual in coming in, but is now plentiful, and it will be best not to cut it too closely, but leave a few heads distributed regularly over the beds. This will leave enough growth to keep the roots in a thriving condition, and be an assistance to next year's crop. New beds which have been made and are just sending-up young growth should, if the weather keeps dry, be well supplied with water and be kept clear from weeds, to ensure a good growth and the formation of crowns for next year.

Plant-out Brussels Sprouts at once; this vegetable can hardly be had in use too early. Also put out Snow's Broccoli, and if ground cannot yet be spared all other seedlings coming along had better be pricked out and be finally planted out at a more convenient time. The early sorts of greens must be served in the same way. It is also advisable to make another small sowing of all the late kinds of greens to fill up spaces that are at present occupied with other crops.

Plant-out the smooth-leaved sorts of Cabbages for an autumn crop, and do not forget the little Early Ulm Savoy, which is specially adapted for an amateur's garden. But it often happens that in small gardens ground cannot be given up entirely to these crops; in which case, to ensure a regular succession of vegetables, the plants ought to be planted between rows of other crops that do not grow too high to injure their growth nor remain too long in the ground.

If Parsnips are not thinned-out they should be thinned at once, leaving the plants about 8 inches apart. Sow more Peas as soon as the previous crop shows itself above ground; put them in the coolest part of the garden, and they will be found to do better than on the hot sunny borders. Attend well to Scarlet Runners, and sow the last crop of them. This being a quick-growing plant it requires plenty of water; the ground around the plants should also be mulched with manure. This crop when well managed will prove to be one of the most profitable vegetables in the garden.

Earth-up Potatoes before they are too forward, or the roots are apt to be injured by the operation. Continue to hoe and stir the soil in every part of the garden whether weeds are seen or not; hoeing destroys a whole progeny of them, and the garden looks the tidier for it. If weeds are permitted to grow before hoeing the ground the additional labour involved in destroying them is very great. There is much economy in doing everything in time, and efforts should be made to keep ahead of all work as much as possible.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

The weather is sufficiently favourable for carrying on the operations of sowing and transplanting. Many of the small seedlings have been much injured by sparrows; they pull the plants out of the ground, very often only to leave them lying on the surface after crushing the seed leaves with their bills. The only way to save the plants is by netting-over the beds. Other enemies are slugs and earwigs. The slugs get underground by day, and may be found on the plants after 9 p.m., or before 4 a.m. Quicklime dusted over them is speedy destruction. The earwigs also feed in the early morning, they also cluster together just under the surface of the ground and at the base of the plants. By removing the surface soil they may be destroyed by crushing them as they attempt to escape.

Late Broccoli may still be sown in the southern districts. The

latest sown may stand the winter better than that sown a month earlier. Nearly all the Brassica tribe delight to have the hoe worked between the rows, and the early Cabbages now hearing require to have the leaves tied together with a strip of matting. A few ought to be done daily, so that a succession may be kept up. Hill's Incomparable is a very good early Cabbage of small size, and may be planted much closer together than the stronger-growing types. This year, instead of turning-in like the Early York and Enfield, every plant of them ran-up for flower. They were removed and small plants of another sort put out in their place in the spring. These will come in useful for succession. They have now been earthed-up. Notwithstanding the continued cold weather the Cauliflower plants from which the hand-lights have been removed, and those planted later for succession, have started to make healthy though not vigorous growth. Celery plants sown in the open ground are now ready for planting-out on small beds of fine soil. It is necessary after this to plant Lettuce behind a north wall in our dry sun-scorched district. We have had but little of it this year as yet, but the time is at hand when we may expect hot dry weather, preparation for which must be made. After such a protracted period of cold north-east winds a change from the opposite direction with gentle showers would work an amazing change in the appearance of the crops.

VINERIES.

The usual routine work of airing and damping the houses is all that is required in fruiting and succession houses. We do not syringe our Pines at any season, but it is beneficial to them to syringe underneath the plants and to thoroughly moisten the surface of the bed with tepid water. Atmospheric moisture may also be kept up by filling the evaporating troughs with guano water. Where fruit is ripening this ought not to be done: all that is required is to damp the surface of the beds as stated, and damp the walls and paths about twice daily. The succession houses should have a night temperature of 70°, and from 85° to 90° by day. Good strong suckers put into 6 and 7-inch pots at once and started in a similar temperature, with a bottom heat of say 95°, would in a few weeks be established plants. If they were repotted at once into their fruiting pots and still grown-on freely, the fruiting pots would also be well filled with roots by October, when the plants could be rested, and started into growth about the first week in January. In this way very good Queens may be produced in about twelve months from the time the suckers were potted. Smooth-leaved Cayenne is also an excellent variety and does well under similar treatment, but the fruit takes a little longer to ripen.

GREENHOUSE AND CONSERVATORY.

Fuchsias that were started in one of the vineries are now in flower, and will come in useful when the forced flowers are removed; indeed some of them have already taken the place of other plants. The improvement in the Fuchsia during the last few years has been very considerable, the formation of some of the double flowers being very good indeed. The varieties with the more elegant single drops have likewise shared in the march of progress, and for decorative purposes either in large or small houses the Fuchsia is highly valuable. It requires liberal treatment; indeed that recommended for stage Pelargoniums in a previous number may be followed out to the letter, except that red spider attacks the Fuchsia when it is grown in a warm dry atmosphere. In a young state, or until the flowers open, the plants may be syringed freely, and when this is done it is seldom that red spider does much damage to them.

Stage Pelargoniums.—The earliest of them are now in full flower and those for blooming later are in bud; all of them require considerable supplies of water, and they must not be neglected in this particular for one hour. If the leaves flag it is very likely that some of the oldest will fall off, and this may happen every time that the plants suffer. They always flower more freely and produce better trusses when the pots are well filled with roots; a 5-inch pot will be large enough for a plant that will perfect a dozen or more trusses. Green fly is the only pest of stage or fancy Pelargoniums; and if this is allowed upon them to any extent they will not flower well. Fumigation is the best way to destroy it.

Balsams are not so often seen as they ought to be. Some of the best sorts are very useful for either greenhouse or conservatory decoration. A packet of seeds will produce an abundant supply, and they may either be allowed to flower as small plants or be grown into large specimens. The seeds are sown in a frame over a hotbed, and when the seed leaves are fully developed the young plants are potted-off singly into small pots. If it is intended to flower them as small plants 6-inch pots will be large enough to shift them into; but large specimens a yard across may be produced by potting them on in rich soil into 12-inch pots; the flowers must be pinched off as fast as they form until the plant is large enough. When in growth Balsams should be kept close to the glass and receive plenty of light. When the pots are well filled with roots a little manure water will help them greatly.

Cinerarias and Calceolarias for early flowering should be grown-on without any check; a good place for them is in a cold frame behind a low north wall; they are impatient of much sun. Our plants have been pricked out ten or twelve in a 6-inch pot; they will soon be repotted singly in small pots. The greenhouse is now very gay with Azaeas and the usual soft-wooded plants. It is necessary to look over the plants at least once a-week, to remove those that are looking shabby and to replace them with others coming into flower; it is also well to damp the paths occasionally, and above all to keep the plants free from insect pests.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

James Dickson & Sons, Newton Nurseries, Chester.—*Catalogue of Bedding-out Plants, Border Plants, &c.*
John Harrison, Rose Nurseries, Darlington.—*A Descriptive Catalogue of New Roses, Dahlias, Clematis, Bedding Plants, &c.*
Ad. Pollak, American Agent, Stadt Bräunerstrasse 5, Vienna.—*Illustrated Catalogue of Garden Implements, Garden Ornaments, &c.*

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

WESTMINSTER AQUARIUM. May 30th and 31st, July 5th and 6th.
UNDERCLIFF. May 31st. Mr. T. H. Clough, Hon. Sec.
MANCHESTER (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.
SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fuldge, 89, York Street, Sec.
SOUTH ESSEX (LEYTON?). June 13th. Mr. G. E. Cox, Wilnot Road, Leyton, Sec.
SWAFFHAM. June 14th and 15th. Mr. T. G. Smith, Hon. Sec.
IPSWICH. June 15th, July 6th, and September 17th. Sec., Mr. W. B. Jeffries, Henley Road, Ipswich.
EDINBURGH (Scottish Fanny Society's Show). June 16th. Mr. N. M. Welsh, 1, Waterloo Place, Edinburgh, Sec.
CRYSTAL PALACE (Roses). June 18th and 17th.
COVENTRY. June 19th. Mr. T. Wilson, 8, Portland Terrace, Sec.
MALDEN (Roses). June 21st. Mr. Hubert Bensted, Bookstow, Malden, Sec.
FAREHAM AND SOUTH HAMPSHIRE. June 21st. Mr. H. Smith, Sec.
SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.
EXETER (Roses). June 23rd. Mr. T. W. Gray, Hon. Sec.
REIGATE (Roses). June 24th. Mr. J. Payne, Treasurer.
BURTON-UPON-TRENT. June 26th. Mr. F. S. Dunwell, Sec.
LEEDS. June 26th, 29th, and 30th. Mr. James Birkbeck, Delph Lane, Woodhouse, Sec.
RICHMOND. June 26th. Mr. A. Chancellor, Hon. Sec.
WEST OF ENGLAND (HIERFORD). Roses. June 29th. Rev. C. H. Bulmer, Credenhill, Sec.
FROME (Roses). June 29th. Mr. A. R. Bally, Hon. Sec.
WIMBORNE (Roses). June 29th. Mr. C. Parker, Hon. Sec.
TORBAY. June 29th and 30th. Mr. W. Fane Tucker, Capt., Braddon, Tor, Hon. Sec.
OXFORD (Roses). June 30th. Mr. C. R. Ridley, 115, Aldate's, Hon. Sec.
BROCKHAM (Roses). July 1st. Rev. A. Cheales and Mr. C. Mortimer, Secs.

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

1875 INDEX (*Amateur*).—You can have one.

PRIZE MONEY (*A Subscriber Seven Years*).—Gentlemen usually give all the money to their gardeners.

TREATMENT OF VINES (*Five-years Subscriber*).—When you have more than one bunch on a lateral the extra bunches may be removed as soon as you can discern which is the best. If the bunches are large, one to every alternate lateral will be enough. Water as it drains from cow sheds would be too strong. It may be diluted with half water for Vines and about four times as much clear water for plants. Sprinkle a little guano on the surface of the border, and water with clear water for a change. The fruit ought to be ripe by the end of August. We cannot name plants from leaves only.

TREATMENT OF FRUIT TREES (*F. H.*).—We do not quite see what advice you want. You did wrong to add fresh manure from the stables. If the house is not close enough to allow of fumigation you must destroy the aphids with soft-soapy water to which some tobacco liquor has been added. Why the fruit did not set it is not possible to say, as you do not give the treatment at the time, nor do you say if the house is heated. If the treatment was right the fruit ought to have set well.

REMOVING STRAWBERRY RUNNERS (*Mrs O.*).—It is especially inexpedient to remove the runners as soon as they appear from newly-planted Strawberries growing luxuriantly, for in such case they very usually will produce nothing but more suckers and a profusion of luxuriant leaves. Indeed, we are of opinion that runners should never be removed from a Strawberry plant until its fruit is set, and even then only such as are not rooted.

ANEMULAS (*G. S.*).—We do not know whether Mr. Headly's Anemulas were sold privately or whether they are retained.

PANSY (*J. B. W. Ferrie*).—It is very like one called Dux; but there is a legion.

VINE LEAVES YELLOW (*R. A. W.*).—Defective root-action is probably the cause. Water the Vine liberally with tepid water and weak liquid manure occasionally.

NITRATE OF SODA (*St. Edmund*).—One pound to thirty square yards, applied to the surface of the Potato ground immediately after the plants appear above ground. It is well suited to light soil.

IN FLUX ULTRA PEA SOWING (*Idem*).—Sow at once and again at the end of the month in trenches prepared as for growing Celery.

MAKING A HOTBED OF TAN (*St. Edmund*).—The faggots at the bottom of the bed are quite unnecessary, though if the site be a wet one a layer of them would prevent the tan from being soaked with water and for a distance from the floor or ground thereby made inert. It will not be needful to renew the tan or place fresh around the sides of the bed; the tan will last all the summer. You may advantageously use the mowings of the lawn as linings to the bed each time the lawn is mown. The soil taken from hedge-rows will answer, but it would have been better had it been laid up in a ridge-like heap since autumn.

WOOD ASHES (*Ludovicus*).—They will not make a good compost for plants, and ought not to be used in greater proportion than one-sixth of the compost, and in that case only for softwooded plants. They will be valuable in the kitchen garden, especially for Onions, Carrots, &c.

CREEPERS FOR RUSTIC STUMPS (*Idem*).—We should clothe them with Clematis and Ivy, of both which there are several varieties, and of the Ivies many fine variegated forms. The Clematis would have a fine effect in summer, and the Ivies give an evergreen mantle in winter, being no worse for the Clematis rambling over it, but the better for the grateful shade. Honey-suckles are very suitable for such work here and there, with Jasmium nudiflorum giving its golden tubes in midwinter. We should also have plants of Berberis Darwinii, Cotoneaster microphylla, and Forsythia suspensa. Ligustrum japonica planted at the base, adding in summer flowering climbers, as Cobaea scandens, Ectemecarpus scaber, to remain permanently, with Olea stegia flore-pleno and Convolvulus sepium roseus, both permanent; Tropaeolum speciosum, T. canariense, Maurandia Barclayana, Lophospermum scandens, Everlasting Pea (Lathyrus grandiflorus), and L. latifolius, not forgetting climbing Roses of the Ayrshire class.

HEATING SURFACE TO EXCLUDE FROST (*O. E.*).—Your tank of 88 superficially heated surface will not be sufficient in an unusually severe winter to exclude frost from 900 cubic feet of enclosed air. Forty-five feet of heated surface will be necessary, though in an ordinary winter you may be having the surface at a great heat keep out frost. Better have more heated surface.

TEN-WEEK STOCKS DAMPING-OFF (*An Amateur*).—It is a consequence of the plants being too thick, the soil too wet at the surface, and the seedlings not having sufficient air. Admit air more freely, and prick off in pans an inch to 1½ inch apart, shading from bright sun until established.

EXHIBITING GREENHOUSE FOLIAGE AND FLOWERING PLANTS IN AUGUST (*Amateur*).—Foliage: Dracaena australis, Yucca aloifolia variegata, Lomatia elegantissima, Cissampelos Baueriana variegata, or Abutilon Sellowianum marmoratum. Flowering: Cassia corymbosa, Crocus saligna major, Erythrina profusa, Kalosanthus coccineus superba, Lapageria rosea, Leschenaultia Baxteri major, Nerium rubrum plenum, "Plumbago capensis," Swainsonia Fendleri, and Wisteria corymbosa. Those marked with an asterisk will require trellises, and a few more plants are named than you require in order to enable you to have the better chance of the required number in bloom at the time wanted.

AZALEAS FROM CUTTINGS (*O. E. P.*).—They are readily propagated by this method—the top of the shoots being taken when a little firm at the base, but not hard, inserting two-thirds the lengths of the cuttings in pots well drained, filled to within an inch of the rim with sandy peat, and to the rim with silver sand, keeping moist, covered with a bell-glass, shaded from sun, and in gentle heat until rooted, then gradually harden off.

CUCUMBERS NOT SWELLING (*O. A.*).—We are unable to account for the fruit not swelling, as you say the heat is good both at top and bottom, but we think it arises from the house being kept too cold and close. A little more heat, especially bottom heat, would, no doubt, with freer air-giving, afford a remedy.

VINE CULTURE (*Shepherd*).—We do not remember your letter. If you require full directions for Vine-culture buy our "Vine Manual." You can have it free by post if you enclose thirty-two postage stamps with your address.

ALPINE STRAWBERRIES (*J. E. L.*).—They are usually raised from seed. We cannot tell where you can obtain seed.

FRAGERS FAILING TO SWELL (*M. R. C. S.*).—In the first place we think the flowers have been imperfectly fertilised, and in the second place that the trees are unhealthy. Are they not mildewed? If so, dust the affected parts with flowers of sulphur. If the trees are weakly, which we suspect, apply a dressing of manure to the surface of the soil, watering copiously. Ventilate freely yet judiciously, not entirely closing the house at night, and with this course of treatment your trees will probably be brought into a better state, and you will not have a recurrence of the evil of which you complain.

DESTROYING MILLIPEDS (*A Dublin Subscriber*).—The "worm" is one of the snake millipeds which are often very abundant in old garden soils or those from long cropping containing much decaying matter. The best thing to use against such vermin is gas lime, applying at the time of putting in the crop at the rate of half a peck per square rod (80½ square yards). It will drive them away. Lime is also a first-class application, applying it in March at the rate of half a bushel per rod, and pointing it in, using it in its fresh-leaked state. Nitrate of soda is also good against such things; you may apply it now at the rate of 1 lb. per rod. Soap-suds, from the amount of soda usually held in solution, would not prejudicially to the pests, and yet you will need to use the soapy fluid with care, as an overdose may do more harm than good.

RED SPIDER IN DUNG BEDS (*An Amateur*).—You have the red spider from keeping the air too hot and dry. Sprinkle the plants overhead in the early part of the afternoon, shutting-up close, and shade with mats if the sun be powerful. Remove the worst of the leaves, and by keeping the air moist you will have little red spider.

GREEN FLY ON CALCEOLARIAS (*Idem*).—We presume they are herbaceous kinds; if so, fumigate with tobacco, which is the best of all means of destroying these pests.

FLY ON GOOSEBERRY TREE (*J. S.*).—The fragments we received seem to be parts of the Gooseberry Sawfly, Nematus Ribesii, which is the parent of the small green caterpillars.

NAMES OF PLANTS (*Miss O.*)—*Veronica serpyllifolia*. (*Constant Reader*).
Amelanchier canadensis. (*C. W.*)—*Pellaea flexuosa*, *Adiantum tenerum*.
 (*G. B.*)—*Asperula odorata*, Sweet-scented Woodroof. (*J. P.*)—We cannot
 name from leaves only.

POULTRY, BEE, AND PIGEON CHRONICLE.

BOOTED BANTAMS.

BY REGINALD S. S. WOODGATE.

We have seen at exhibitions and other places White, Black, and Mottled Booted Bantams, but we have never seen any of the two latter colours to equal good specimens of the White variety. They are a very old-fashioned breed, and specimens are often to be found in out-of-the-way villages, where the stock has been allowed to degenerate until it has lost many of its chief characteristics, but still unmistakable proofs of the real Booted Bantam remain. It is the Mottled or Speckled variety which is generally so found, and we often fancy that many of them may have been the result of a cross with a White or some other Bantam, for the leg-feathering is generally the last thing to breed out, and so has remained to stamp the descendants with boots and leg-feathering. We are quite aware that the Speckled variety has been imported with very tolerably good show points, as have the Whites, but we think they are really very old English customers, and were the British Bantam long before Sebrights, or Game, or Black Rose-combed Bantams were known. When classes are given for them they generally muster very fairly well; and with a little more trouble to circulate the schedules which contain such classes among the fanciers and admirers of the breed, we think many more entries would be found, for as a rule they are more to be looked for as lawn pets in country homes than in the exhibitors' pens. It is but sorry work to enter them in a Bantam class at a general exhibition; for Pekins or Sebrights often, just because they are Pekins or Sebrights, irrespective of merits, sweep away everything. We often really wonder Bantam exhibitors do not protest against those ever-winning Sebrights always taking the prizes. It does not matter whose they are or where they come from, or if there is only one pen in the class, but a commonly decent pair will walk off with first prize or cup; and let a pair of Booteds be absolutely perfect they generally find one of those "highly commended" cards at most as their reward. We could name one judge in Lancashire who is kindest with them, and sets the most fairly of all judges we know towards them, while we can name a southern one who confesses he has no partiality for the breed.

They certainly make most amusing pets and look extremely pretty on lawns, and from the immense amount of leg-feathering they rarely do much injury in the garden. They have interesting little ways and can be taught easily to jump up to the windows to be fed, consequently they make great pets for children; and we know of two or three little nursery establishments whose live stock are Booted Bantams, for they soon get so tame and feed from the children's hands.

For exhibition the Whites should be as pure in colour as possible, and the Blacks as deep in colour and glossy in plumage as can be obtained, both of which latter points are difficult to get, for the Blacks are in the habit frequently of coming quite rusty coloured. The markings of the speckled or mottled are a matter of taste, as much as they are in the Houdan. We have seen them with a deep chocolate ground and white spangles, which made a pretty contrast. They should have upright single combs in our opinion; and though sometimes we come across the double combs, still we think by them the breed loses much of its character, and often are inclined to think they result from a cross at some time or other with a Rose-combed White, for we can find no record of the old English Booted Bantam being rose-combed, though we hear from many places, especially in the east of England, of a single-combed variety having existed there for very many years. They should be as small as possible; but we are afraid there is a tendency to breeding them too large. We have tried in-and-in breeding, but find we get them no smaller—in fact, if anything, rather larger. They should be compact in shape and not squirrel-tailed, which generally shows a cross with the Japanese for the sake of the comb in the first instance. We conclude they should be heavily leg-feathered and booted, and have long hooks touching the ground. We like them short on the leg, but not too short so as to look like Dummies. The White variety requires to be shown very clean and pure in colour for any hope of success. In mating them for breeding choose the best-coloured specimens and heaviest feathered. If not wanted for the chicken shows we should recommend the chickens being hatched in June, as more likely to keep them small. The older a bird gets the heavier does the leg and foot-feathering come, and so we generally prefer not to exhibit them until after their first moult. The White cocks are much inclined to turn yellow from the sun, as all white poultry do; but if kept in the shade they will, if of a good strain, remain white through the whole summer.

The chickens are hardy, but being so very small when hatched require a gentle mother. They make good sitters and nurses themselves, but their long hooks and feet-feathering make them liable to roll the eggs from their nests when leaving them to feed. The chickens are hatched as white as the driven snow, and afford a peculiar contrast to Silkie, which so often hatch a deep buff and feather so very white. The eggs range in colour from pale buff to a delicate cream colour, and often are quite white. They are certainly large for the size of the birds.

Booted Bantams seem to bear confinement well, and a few feet of smooth lawn would be much better for them than a larger and rougher run, for on long grass or rough soil they very frequently break off the long feet feathers, and wear their hooks down by the friction. For town Bantams, where something quaint is appreciated, we strongly recommend Black Booted if they can be procured good, and there is no reason then why the amateur with the smallest back garden in the smokiest town should not come to the front in the exhibition ranks. The Whites would answer the purpose equally as well, but they would require washing for exhibition; and although it is the simplest thing possible to wash a bird, many will not believe it, and if they did would not care for the trouble, which is certainly considerable. We may state for the benefit of those who read this Journal and yet do not see the Crystal Palace schedule, that that Society gives a class for the White Booted variety.

A NATIONAL POULTRY CLUB.

In your issue of Thursday last I find your reply to my question as to your ideas of a national poultry club. I can now see quite clearly the force of your reasoning, but I think you give too much weight to the effect of these poultry clubs. You say, "We think that he would never attain his objects unless he had his branch club;" but I think all must acknowledge that, considering the time Leghorns have been exhibited in England, they have come wonderfully forward without the aid of a club (for which Brown Leghorn fanciers must thank Mr. Kitchen), and I do not doubt but that we could eventually have succeeded in getting a definite standard and classes at most shows, but it would certainly have taken a great deal more time, more trouble, and more expense than it will now do. I personally am quite willing to go in for a national club formed in the way you propose, or, in fact, for a national club formed in any way so long as it will do its work satisfactorily; but I see difficulties in the way of your scheme, although they might soon disappear if the club was really started. My idea of a national poultry club is one with branches or auxiliaries in every town or district; these branches to have control of the show for that town or district, and to look after its immediate interest. For instance, we might have a branch for South Northumberland and North Durham, with headquarters in Newcastle, and our show might in rotation visit all the towns in the district, and with the support of all the fanciers in the district there would be no fear of any loss arising. Every district might do the same, and although it would mean the extinction of one-half, if not two-thirds, of the present shows, that would be no evil, but good. We should then have fewer complaints of defaulting shows, for the public would support those chiefly which were connected with the national club. A subscription of 2s. 6d. or 5s. per annum would draw a host of members, doing away with any need of donations, which now give no control over the way the money is spent or mis-spent. Each member of the branches would be a member of the central club, and delegates would be appointed to represent branches at the club meetings. So that the individual varieties might not be neglected, it would be a wise plan to have a committee of the national club to look after each variety, and that would attain the object you seek. This, then, is a rough sketch of what I think would work well and be of great utility to the poultry world generally; and although it would probably at first tread upon some people's corns, yet with an earnest desire for the general good all difficulties would disappear. As I said before, I am willing to join any real national club. I hope some of our leading fanciers will take the matter up, and then the thing will succeed; but if it has to be started by the small fry—well, it won't be started.—EDWARD BROWN, 24, Gloucester Road, Newcastle-on-Tyne.

RUGBY SHOW OF PIGEONS, &c.

THIS was held at the Workmen's Club, Castle Street, Rugby, on the 17th and 18th inst., when the following prizes were awarded:—

PIGEONS.—Pouter.—Cock or Hen.—1, S. Baker. 2 and 3, W. Nottage. CARRIERS.—Cock or Hen.—1 and 2, H. Yardley. 3, T. Wheeler. BARBS.—Cock or Hen.—1 and 2, H. Yardley. 3, Capt. Trounser. TUMBLES.—Long-faced.—Cock or Hen.—1, A. McKennie. 2, R. Woods. 3, F. W. Jennings. OWLS.—English.—Cock or Hen.—1, Extra. 2, J. Barnes. 3, R. Woods. TURNERS.—Cock or Hen.—1 and 2, R. Woods. 3, J. W. Smith. 4th, H. Yardley. JACOBINS.—Cock or Hen.—1, E. Yardley. 2 and 3, W. Nottage. DRACONS.—Cock or Hen.—1 and 2, R. Woods. 3, A. McKennie. 4th, F. W. Jennings. ATTERERS.—Short-faced.—Cock or Hen.—1 and 2, H. Yardley. 3, J. Mantell. Hovings.—Cock or Hen.—1 and 2, H. W. Croose. 3, T. Wheeler. ANY OTHER VARIETY.—Cock or Hen.—1, H. Yardley. 2, H. W. Webb (Frillback). 3, W. Nottage. 4th

B. Robinson (Icel), F. P. Bulley (Priest). SELLING CLASS.—*Pairs*.—1 and 2, W. Nottage (Carriers). 2, J. Barnes.

CAGE BIRDS.—*Canaries*.—*Clear Norwich*.—1, W. Smith. 2, L. E. Carleton. 3, H. Dickens. *Any other variety*.—1 and 3, W. Smith. 2, H. Dickens. *Mules*.—1 and 2, G. E. Russell. 3, S. Cook. *British Birds*.—1, W. Smith. 2, G. E. Russell. 3, C. E. Foxon. *Parrots, or any variety of foreign bird*.—1, J. A. Barra (King Parrot). 2, Mrs. J. R. Salmon (Grey Parrot). 3, Mrs. J. Abbott (Budgerigar).

RABBITS.—*Lofted*.—*Buck or Doe*.—1, C. E. Thompson. 2, R. Madgwick. 3, J. A. Barra. *Angora*.—*Buck or Doe*.—1 and Extra, R. Madgwick. 2, Foster and Robinson. 3, H. E. Gilbert. *Dutch*.—*Buck or Doe*.—1 and 3, Foster and Robinson. 2, W. B. Robinson. *the Foster & Chambers, J. Owen. Himalayan*.—*Buck or Doe*.—1 and Extra, W. Hey. 2 and 3, H. E. Gilbert. *the R. W. Gosham, W. Hey. Silver Grey*.—*Buck or Doe*.—1, H. E. Gilbert. 2, B. Robinson. 3, T. Goughly. *the E. Snell, H. E. Gilbert. Any other variety*.—*Buck or Doe*.—1, H. Barham (Belgian Hare). 2, Foster & Robinson (Belgian Hare). 3, G. Viner (Belgian Hare). SELLING CLASS.—*Buck or Doe*.—1 and 3, Foster & Robinson (Dutch). 2, Foster & Chambers.

CATS.—*Short-haired*.—*Male or Female*.—1 and Cup, T. N. Gilbert. 2, E. Baxter. 3, E. Barton. *Belonging to Working Men*.—*Male or Female*.—1, Mussen. 2, E. Collins. 3, T. Curs. *Long-haired*.—*Male or Female*.—1 and Collar, T. Weightman. 2, T. Hill. 3, Miss Jevons.

JUDGES.—Mr. E. Hutton, Columbian House, Pudsey, Leeds.

THE PRICES OF CANARY BIRDS AND CANARY EGGS IN OLDEN TIMES.

From the translated edition of Mr. Hervieux's "Treatise on Canary Birds" I quote the following remarks, which may be interesting to many fanciers who have realised very high sums for their birds. It is evident that our Parisian neighbours in olden times must have estimated their pets at a far greater value than our English fanciers do at the present period, although to my own knowledge many Canaries and Mules have been sold for £5 each, some as high as £10, and in two or three exceptional instances even as high a price as £20 has been given. But respecting "Mules," Mr. Hervieux appears not to have used the term, preferring the word "mongrel," by which he designates all cross-bred birds. The translated edition is dated 1718, and it speaks of the "common prices Canary birds are now sold for at Paris." Another interesting peculiarity attached to the work is the names by which the birds were then styled, and which I may remark upon in some future chapter.

"There are very many persons of all ages and conditions in this city who do not yet keep Canary birds, and yet would be willing to have one or two to divert them after their usual affairs are over with their sweet notes; but most of those persons still remembering the price that Canary birds bore ten years ago, without inquiring what they are now worth, believe it is still the same. Thus the ignorance of some and the covetousness of others are the cause that many go no farther than to wish for Canary birds without attempting to buy them. My design is to undeceive those people by writing this chapter for their sakes, wherein I will set down the common prices Canary birds now bear. To observe some order I will begin with the prices of the most common Canary birds, and conclude with those that are by curious persons reckoned the most beautiful and dearest.

"A common grey Canary bird, 8 livres 10 sols.
 "A rough-footed or white-tailed Canary bird, 5 livres.
 "An ash Canary bird, rough-footed or white-tailed, £5 10s.
 "A common yellow Canary bird, £4.
 "A yellow Canary bird, rough-footed or with a white tail, £6.
 "A common mottled Canary bird, £4.
 "A mottled Canary bird of the copple-crown breed, £5 10s.
 "A common buff colour Canary bird, £4.
 "A buff colour Canary bird with a cast of gold colour, £5 10s.
 "A common copple-crown Canary bird, £6.
 "A Canary bird with an ash-colour copple-crown, £7.
 "A Canary bird with a black copple-crown, £10.
 "A Canary bird with a regular black copple-crown, £20.
 "A common lemon-colour Canary bird, £15.
 "A lemon-colour Canary bird with a black regular copple-crown, £25.

"All white Canary birds with red eyes are of so little value, at this time especially, when there is plenty of others, that I have not thought fit to speak of them according to their several degrees of beauty, the finest of them not exceeding the value of £4.

"The price of Canary birds here set down may vary upon two several occasions. The first is when those same birds are bought some days after they are hatched, as many do, to breed them up by hand; then at least the third part of the price is to be abated in every sort of what is here set down. For instance, a Canary bird that costs 15 livres when he can feed himself, is worth but 10 livres if taken when he is but ten or twelve days old. The price in like manner advances one-third beyond what has been set down when a Canary bird is bought after he is passed all the danger of his first moulting as in March. So a Canary bird of 15 livres price in October will cost 20 livres in March the next year, and the like of all others."

The selling of young birds just hatched, and also eggs prior to being set upon, appears to have been much encouraged in Paris at one time, and more so before Mr. Hervieux wrote his treatise. In some cases I have known this to be done in England, and it has somewhat baffled the endeavours of those members who

encouraged close shows to prevent the purchasing of young birds' eggs, and carry into full effect the laws of their society, which have stated "that no egg or eggs, or bird or birds, shall be taken in or sent out, or sold or exchanged," under certain penalties. So far all-England shows are worthy of more encouragement as possessing the better means of protection to honest exhibitors. Mr. Hervieux further says:—

"We frequently see curious persons who are well to pass in the world, and make nothing of giving 800 or 400 livres for a couple of Canary birds they fancy. I will not be particular as to the price of mongrel Canary birds. Some of them are not worth so much as the natural Canary birds; but there are also others whom Nature has formed so beautiful and regular as if they had been drawn with a pencil. The price of these is considerable, and such being very rare, he who has them often meets with curious persons who give him whatsoever he asks for them; as for instance, three little mongrel Canary birds [Mules] were some time since sold here to a curious stranger for 500 livres.

"Nor will I spend time upon the value of Canary birds' eggs, because the selling of them begins to grow out of date. . . . Those who first began to breed Canary birds in this city made what they would of them, for they sold the very eggs at considerable rates. Some of them have been bought for 10 crowns a-piece, and very often they were added or the little ones dead in the shell."

The practice of selling eggs or young hatched birds appears to have been discountenanced by Mr. Hervieux, for the reasons that purchasers might become possessed of useless and unfertile eggs, or young hatched birds not of the same blood as the pair they might be partly reared by; and not only this, but the possibility of buying eggs from a breeder who, through ignorance, may have coupled two hens together. After the detailing of certain impositions carried on by some, the writer states:—"I have thought myself obliged to take notice hereof for two reasons: First, to discourage several curious persons who are not well versed in this affair from buying eggs after this manner at random, their money being for the most part thrown away, because there are everywhere people ready to impose upon their credulity, and to treat them as has been observed above; and they being thus forewarned will be the more upon their guard, being first convinced of the probity of those from whom they would buy their eggs, and consequently will not grow weary of the innocent diversion of Canary birds when they see all they undertake succeed. Secondly, because curious persons being thus warned not to buy Canary birds' eggs of all persons without distinction, they will avoid being the innocent cause of the fault committed by those who burden their own consciences by wronging others."—Geo. J. BARNESBY.

SYSTEMS OF MANAGEMENT.

Bees are excellent servants under fair play and fair weather. They cannot well serve us without fair weather, but with it they will do all they can do, and that is a great deal, to fill their houses with honey under any system of management. The bee-keepers of this country are not often favoured, like those of other countries, with cloudless skies and a continuance of warm melting weather.

At the present time a gentleman from the backwoods of Ontario, seventy-five miles from Toronto, is staying with us. He is a bee-keeper in a small way, and is seeking information with a view to become a more extensive bee-farmer. According to his accounts bees gather honey very fast with him, and which realises about 8d. per pound, and honeycomb in 5-lb. boxes about 10d. per lb. The winters there are long and severe, but the summers are warm and genial, causing the flowers to yield honey in great abundance. Bee-keeping there and in some parts of the European continent is more certain than it is in our colder and changeable climate, and capable of greater development. British bee-farmers have the advantage of higher prices and milder winters. In Canada there is an unlimited extent of what my friend terms "maiden bush" (unbroken forests) containing many kinds of fruit trees and others which yield honey. In our heathery districts we have a "maiden bush" rich in honey, though of humbler stature than the forests of Canada. Bee-keeping almost everywhere is capable of improvement and development, and, generally speaking, affords most pleasure to those who understand it the best, for pleasure often goes hand in hand with perfection. First-rate painters, gardeners, or farmers are enthusiasts, and have within them a well-spring of satisfaction. All bee-keepers should have a system of management of some kind, and be masters of it; and whatever is worth doing should be done well.

In a letter or two I mean to notice several systems of managing bees with a view to give the readers of the *Journal of Horticulture* a comprehensive view of practical apianism, and every system is capable of improvement and modification.

The ancient mode of bee-keeping in this country has been of

late years often termed "barbarous" and "inhuman," "brimstone-pit" and "stifling." It is still practised very extensively by the cottagers of England and Ireland. This system has been handed down from parent to child through all the ages. It is no easy matter to remove ignorance and prejudice. Bee-keeping as practised by English cottagers has not been improved, or even been modified from time immemorial; but it is certain that the battering-ram of "greater success" will prevail and remove prejudices of long standing. The idea of pounds, shillings, and pence cause people to learn the multiplication table and go on the exchange. The prejudices of Englishmen are not immovable, for the beginnings of enlightened progress in bee-keeping may be seen in many districts.

The cottagers' hives are very small, generally very ugly, and badly made, and as badly covered. They receive but little attention, and are but seldom touched—I might venture to say never examined internally. When fine seasons come they swarm once, often twice, sometimes thrice. The swarms are hived. When harvest time arrives the honey is generally taken from the heaviest hives, the bees of which are stifled in the brimstone pit. In bad seasons the bees of the lightest hives are stifled, and scarcely any honey is obtained from them. The ages of queens and combs are seldom if ever thought about. Pigs and hens being profitable command intelligent attention, but the bees live and die without attention comparatively speaking. The cottagers' system is one of mismanagement and murder—uninteresting and profitless. The hives used by the cottagers of England are ridiculously and unprofitably small, and no material improvement in management will take place till hives very much larger are introduced and adopted. With larger hives their profits would stimulate attention and sharpen intelligence and observation. Their modes of management would soon be improved, the number of swarms lessened in bad seasons, and the brimstone pit would disappear.—A. PATTISON.

BEES DYING.

I HAVE kept bees for many years, but never experienced so trying a season as this last winter. Eight stocks I kept through the winter; two were very weak and died, but not till the end of April; they were all well fed. One hive that seemed very strong were out one day this month and seemed very busy all day. In the evening I looked at them—they seemed very quiet. I lifted the hive; all were dead. What could have been the cause of their death? Two more hives seem very sickly, refuse to eat, and will, I fear, die. I have always found the old-fashioned straw hives with straw supers most successful, and such I generally adopt.—HARRY THOMSON, Glamorgan.

[Almost all British bee-keepers think with you that this season up to the present time has been one of the worst and most trying for bees ever known. Out of eight stocks you have lost three, and two more are likely to die. Two of your weak hives died in April, probably from not having reared young bees to take the places of those bred last autumn. Bees die at the end of nine months from the cell; and if unfavourable weather prevent them from rearing young ones in March or April to take their places, the hives of course become tenantless. Your other hive that seemed very strong and busy one day this month, the bees of which seemed to work well but were found dead in the evening, was being robbed on the day you saw the bees going in and out and examined the hive. The bees of the hive had died previously, and the robbers found this out and took all the stores. Your two sickly hives which refuse to eat will probably expire soon, but if the bees now living are young ones they may perhaps be able to hatch some brood and thus gain a little strength. The materials of your hives are right enough, and are not in any sense the cause of your misfortunes.—A. P.]

OUR LETTER BOX.

HEN WITH COCKLE UNTIL LAYING (T. T. H.).—We believe you may safely expect every egg to be fertile, unless a very large number is laid. We are aware of the peculiarity in Turkey. In a state of nature both fowl and Turkey will lay only as many as they can cover in sitting—about fifteen each. By taking them away we make them lay three times as many. There may be stoppages for some days, advantage might be taken of them, but if we did not we should expect full success.

WOODBURY HIVES.—Several correspondents wish to know where these hives can be purchased.

TIME OF SWARMING (Triceps).—A hive may be ready for swarming before drones appear, and it may not be ready for fourteen days after they have appeared. In ordinary weather a hive is ready for swarming three weeks after the bees have covered the combs, and the fullness or readiness of a hive may be guessed at by the heat and noise; but an internal examination is the most certain way of ascertaining when a swarm should be driven. By blowing smoke from fustian rags into a hive and then turning it up we ascertain at once whether it is ready for driving, and if not, when it will be ready. If the bees fall from the face of the combs on the board after being smoked it is fit for swarming. If the smoke drives all the bees up amongst the combs swarming should be delayed till the hive becomes fuller. All who adopt artificial swarming should be guided by the ripeness of hives and study the

question of ripeness, for much injury is often done to both stocks and swarms by premature separations.

LARGE BEE HIVES.—Messrs. Neighbour & Sons inform us that at the Crystal Palace Show of last year they had the first prize for the cheapest and best straw skep, which they have named Neighbours' Crystal Palace Straw Skep. Size of skep is 17 inches wide by 9 inches deep.

ANTS ENTERING HIVES (P. Appleby).—Hives are not often injured by ants, and healthy strong hives are able to defend themselves against all enemies. If your bees are accustomed to the presence of ants they may not repel them. By raising the hive off the ground 2 or 3 feet and gas-tarring the post near the ground the ants could not reach the door, or you may succeed by changing the position of the hive till the bees forget the ants and their friendly visits. If they are permitted to enter without resistance afterwards you may be sure that something is wrong inside.

FEATHER-EATING PARROT (M. S.).—If the bird's cage has a wire bottom let it be taken out, and give the Parrot plenty of sand with some small stones in it, so that the bird may pick out some and swallow them, then give a change of diet; let the bird have some soaked Indian corn, and some fruit and green food, watercress, &c. A piece of bread dipped into a boiled egg is an enjoyable morsel to a Parrot. If change of food and what we have recommended has no effect on the habit, then make what is called a "cradle" in the stable, and put it on the bird's neck until the bad habit is forgotten. The collar, or cradle, can be made either of leather or pieces of cane fastened with string. It will not hurt the bird to wear it.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 6' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1876. May.	Barom. at top of bar and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		In sun.	On grass	
		Dry.	Wet.			Max.	Min.	Max.	Min.			
We. 17	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	deg.	deg.	In.
Thurs. 18	30.178	54.0	50.0	N.	50.0	50.0	49.0	107.4	84.1	—	—	—
Fri. 19	30.231	49.1	44.4	N.N.E.	50.0	50.4	40.4	114.3	82.3	—	—	—
Sat. 20	30.328	51.5	48.0	N.	50.0	51.5	48.1	116.5	87.5	—	—	—
Sun. 21	30.528	54.0	45.7	N.	51.5	58.5	37.8	114.3	81.8	—	—	—
Mon. 22	30.108	61.5	58.5	W.	58.0	70.1	41.0	118.4	89.1	—	—	0.438
Tu. 23	30.584	56.7	51.5	W.	58.5	64.8	44.7	108.5	86.5	—	—	0.013
Means	30.778	57.5	58.5	S.W.	59.7	61.5	47.0	98.1	83.5	—	—	0.641

REMARKS.

17th.—Northerly wind still prevailing; air very dry.
18th.—Very dull morning; much finer and brighter in after part of day.
19th.—Dull early; afterwards very bright and pleasant.
20th.—Very fine and bright throughout.
21st.—Close and dull; much warmer. Maximum temperature rose to 70° for the first time since April 8th.
22nd.—Cloudy morning; heavy shower at 4.15 P.M., and very heavy hailstorm between 7 and 8 P.M.
23rd.—Dull, with slight showers at intervals.
There is a slight rise of mean temperature consequent upon the change to westerly wind on Sunday.—G. J. SIMONS.

COVENT GARDEN MARKET.—MAY 24.

AN abundant supply of all classes of goods keeps prices down, there being large quantities of Grapes from the Channel Islands and outdoor fruits and vegetables from the Continent to meet any want that may be felt owing to the backwardness of home produce.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	5	0	Malberries.....	lb.	0	5	0
Apricots.....	box	1	5	0	Nectarines.....	dozen	0	5	0
Cherries.....	box	1	5	0	Oranges.....	✓ 100	0	5	0
Chestnuts.....	bushel	0	0	0	Peaches.....	dozen	0	5	0
Currants.....	1 sieve	0	0	0	Pears, kitchen.....	dozen	0	0	0
Black.....	do.	0	0	0	dessert.....	dozen	0	5	0
Figs.....	dozen	0	15	0	Pine Apples.....	lb.	1	0	0
Filberts.....	lb.	0	1	0	Plums.....	1 sieve	0	0	0
Gobs.....	0	1	0	0	Quinces.....	bushel	0	0	0
Gooseberries.....	quart	0	5	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	2	0	0	Strawberries.....	oz.	0	5	1
Lemons.....	✓ 100	0	12	0	Walnuts.....	bushel	4	0	0
Melons.....	each	0	12	0	ditto.....	✓ 100	1	5	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	4	0	0	Leeks.....	bushel	0	5	0
Asparagus.....	dozen	1	5	0	Mushrooms.....	potato	1	5	0
French.....	bundle	1	17	0	Mustard & Cress	punnet	0	2	0
Beans, Kidney.....	✓ 100	1	0	0	Onions.....	bushel	0	5	0
Beet, Red.....	dozen	1	5	0	pickling.....	quart	0	6	0
Broccoli.....	bundle	0	1	0	Parley.....	doz. bunches	2	0	0
Brussels Sprouts	1 sieve	0	1	0	Peas.....	dozen	0	0	0
Cabbage.....	dozen	1	0	0	Potatoes.....	quart	4	0	0
Carrots.....	bunch	0	0	0	Potatoes.....	bushel	2	0	0
Cauliflower.....	✓ 100	1	0	0	Kidney.....	do.	3	0	0
Cauliflower.....	dozen	1	0	0	New.....	lb.	0	2	0
Celery.....	bundle	1	5	0	Radishes.....	doz. bunches	1	0	1
Coleworts.....	doz. bunches	2	0	0	Rhubarb.....	bundle	0	5	0
Cucumbers.....	each	0	4	0	Salsify.....	bundle	0	5	0
Endive.....	dozen	1	0	0	Scorzonera.....	bundle	1	0	0
Fennel.....	bunch	0	0	0	Seakale.....	bushel	0	0	0
Garlic.....	lb.	0	0	0	Shallots.....	lb.	0	0	0
Herbs.....	bunch	0	0	0	Spinach.....	bushel	4	0	0
Horseradish.....	bundle	4	0	0	Tomatoes.....	dozen	1	5	0
Lettuce.....	dozen	0	1	0	Turnips.....	bunch	0	4	0
French Cabbage.....	1	5	2	0	Vegetable Marrows.....	0	0	0	0

WEEKLY CALENDAR.

		JUNE 1-7, 1876.		Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.		Day of Year.	
Day of Month.	Day of Week.			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	m.	h.	m.		
1	Th	Royal Botanic Society—Exhibition of Flower Beds.		68.4	45.9	57.2	8	50	8	5	8	31	1	19	9	2	23	153		
2	F	Royal Institution at 8 P.M.		68.9	45.1	57.0	8	49	8	6	8	27	1	10	10	3	18	154		
3	S			69.4	44.9	56.8	8	49	8	7	8	58	1	48	11	2	4	155		
4	SUN	WHIT SUNDAY.		69.8	44.4	56.9	8	48	8	8	6	10	1	48	12	1	54	156		
5	M	Bank Holiday. Southampton Show.		70.5	47.8	58.9	8	47	8	9	7	24	2	53	13	1	43	157		
6	Tu	Zoological Society at 8.30 P.M.		69.9	47.6	58.8	8	47	8	10	8	34	2	37	14	1	38	158		
7	W	Royal Horticultural Society—Great Summer Show.		69.8	46.5	57.9	8	46	8	11	9	35	3	18	15	1	32	159		

From observations taken near London during forty-three years, the average day temperature of the week is 68.7°; and its night temperature 46.0°.

SYRINGING.



O practice in the art of horticulture is so diametrically opposed to Nature as that of forcibly ejecting water from a syringe or engine against the under side of the foliage of plants. To arrive at a necessity or otherwise for syringing plants on the under surfaces of the leaves it may be desirable to point to the diversity which exists between plants cultivated in the open ground and those in an artificial climate under glass.

Those in the open air have in addition to rain that deposition of moisture termed dew, neither the one nor the other having access to the under side of the leaves; and that there is design in the leaves being formed and disposed for throwing off the water either outwardly or inwardly we may safely conclude, and that this design is for the benefit of the plant. Were moisture most beneficial to plants when applied to the under side of the leaves we should not have had such provision made by Nature for preventing it being conveyed to those parts. I am cognizant of the deeper colour of the upper surface of the leaves being the cause of that surface always being exposed to the light, which is abundantly confirmed by reversing the surface of the leaf, and the leaf so reversed regaining its original position. Upon this direction of the leaves the presence of the stomates, hairs, and elevated veins on the under sides of the leaves are principally due; for when by accident or design the surface of the leaves are reversed the under surface being turned uppermost acquire all those characters in consequence of inversion—the previously under side thickening its epidermis to enable it to withstand solar light, whilst the previously upper surface now that it is turned downwards has the power of forming stomates; whilst with the margin of the leaves directed towards the earth and the sky the two surfaces are then equally furnished with stomates.

Now the stomates exert considerable influence in plant economy; the upper surfaces of the leaves have a much thicker epidermis than the under, thickening in proportion to the amount of evaporation caused by the solar rays, the thickness being increased when it is necessary to control evaporation more powerfully than usual; but to furnish leaves with the means of parting with superfluous moisture when the epidermis offers too much resistance to permit its passage, or when in dry weather fluid is not derived in sufficient quantity from the soil, the stomates open, especially at night, admitting atmospheric moisture. The power of leaves to absorb atmospheric moisture has been questioned, but is now generally accepted:—How otherwise could a flagging plant be restored to freshness by sprinkling its leaves with water? The power to absorb moisture appears to be more powerful in the under than upper surface of the leaves, though the power is unquestionably possessed by both surfaces. Greater evidence of the leaves' power to absorb moisture we could not possibly have than that of plants in droughty

weather flagging by day and recovering their freshness at night. I am prepared for being met by this being accounted for by the cause of evaporation being withdrawn, the plant deriving sufficient moisture from the soil to restore its freshness at night which it could not maintain beneath the solar rays; but the fact remains that the same plant placed in a dry room does not recover its freshness, which it does when placed in a moist atmosphere.

It is certain that plants absorb moisture by their leaves, and we are warranted in affording to growing plants a moist atmosphere, and water over the foliage at night approximating to light showers of dew; but water driven against the under side of the leaves is foreign to nature, and certainly cannot act beneficially except by freeing the plants of insects lodging on the under surface of the leaves, for the stomates are most abundant on the under side of the leaves, and to dash water against them must be to close them or to fill them with water, preventing the gradual absorption of atmospheric moisture. Had Nature intended the stomates to absorb water other than in the state of vapour surely they would have been more abundant on the upper than lower surface of a leaf; and that they are not designed to absorb water in its crude state we may, I think, infer from plants with floating leaves having no stomates on the under side, whilst in the case of a plant with the margins vertical, or nearly, as that of an Iris, the stomates are about equal on both surfaces of the leaf. Some leaves have the power of abstracting moisture or nutriment by the upper surfaces of the leaves more powerfully than the under, as the *Drosera* and *Dionæa*; but generally atmospheric moisture is more powerfully absorbed by the under than the upper surface of the leaves of plants.

The unanimous advice given by the best and most experienced practitioners of securing a moist atmosphere is proof conclusive that a moist atmosphere is an essential for free healthful growth; but that actual syringing acts otherwise than mechanically in freeing the upper surface of the leaves of dust and the under of insects is subject of doubt, inasmuch as the very general practice of syringing Vines has been supplanted by the better practice of affording atmospheric moisture by sprinkling and generating moisture by evaporation from warmed surfaces.

Except in the matter of syringing plants on the under surface of the leaves we approach as nearly as it is possible to do by an artificial process to nature in the furnishing of atmospheric moisture; but that it is necessary to drench the foliage of nine-tenths of the plants grown under glass morning and afternoon is not so clearly distinguishable. The practice of sprinkling overhead two or three times a-day is no more necessary for many plants when making fresh growth than is depriving them of every semblance of atmospheric moisture when it is completed. Drenching as occasionally resorted to for the purpose of freeing the upper surface of the foliage from dust and the under of insects may be desirable, but that there is any benefit resulting to the plants so sub.

jected other than that resulting of the mechanical action of the water is not so clear as the necessity of a moist atmosphere.

It is necessary that the upper surface of the leaves be kept free of dust or the foliage will become unhealthy, losing its power of evaporation—of digestion, respiration, and secretion; for though these functions may be mainly performed by the organs on the under surface of the leaves the prompting of their activity is determined by the exposure of their upper surface to light: hence Nature has so bountifully provided for the cleansing of the upper surface of the leaves by rain that nothing, not even an insect, can obtain a lodgement thereon. In nature, however, the wetting of the leaves is not nearly so frequent as the drenching of plants with a syringe. This long-continuance of water upon the leaves of plants certainly does no good, often doing considerable injury, as is evidenced by the browned ends and margins and blotches over the leaf surface—destructive of the digestive power and disfiguring the plant.

I do not profess to insist on water having no other effect upon the upper surface of the leaves than what is purely mechanical, for that would be the ignoring of the beneficial action of dew, which may induce a more complete cessation of evaporation than would be the case upon the withdrawal of light. Were it not for dew falling, vegetation in a dry period would be constantly perspiring, as are plants in the dry atmosphere of rooms, which proves so injurious to them. With plants in an artificially heated atmosphere it is certain that we obtain no deposit of moisture upon the foliage during the night. For this to take place the accumulated heat of the day must be allowed to cool during the night. The allowing of the temperature of plant and fruit houses to gradually cool during the night is much insisted on as securing to the plants a more complete rest than could be had by the maintaining of a high night temperature, for it is the latter which causes growth. A high night temperature when accompanied by dryness is only wasting the energies of the plant, causing it permanent injury. A low but safe night temperature with moisture is the way to provide the plant with a full stomach; the stem, root, and branch being replete with the nutriment necessary for perfect health.

There is a difference in the application of water to the foliage which it may not be undesirable to note. Usually in nature rain is most frequent with a continued clouded sky, the sun being wholly or partially obscured, though not unfrequently showers alternate with gleams of sunshine, which do not have the power of scorching the leaves of plants, as is the case with the sun's rays falling powerfully upon the leaves when wet from syringing under glass. This may be accounted for from the foliage of plants outdoors having air constantly passing over their surfaces, whilst those under glass have a still atmosphere, the water, from the motion of the leaves caused by the wind, sooner freeing their surfaces, whilst the current itself prevents the water being so highly heated as to injure the leaves. This may, of course, be obviated under glass by shading or early air-giving, so as to prevent scorching.

Then we are not all in a position to employ water for syringing with in so pure a state as that had from the clouds. Almost all water conveyed in pipes from, or had direct out of tanks or reservoirs, even rain water, from its mode of collection, the rain falling upon surfaces more or less dirty, appropriating considerable solid matter, as is seen by the sediment which forms, and the certainty of the foliage from frequent syringing with water apparently clear being coated with foreign matter, marring the appearance of the leaves, and preventing them performing their natural functions. Some water is so obnoxious from containing sedimentary matter as to be more hurtful for syringing purposes than beneficial, it being preferable to omit the syringing altogether in such cases than to coat the leaves with the substances that do not pass off by evaporation. The health of the plant demands that the leaves be kept clean, a dirty leaf soon assuming a sickly hue—often quite yellow when the dirt is removed.

From many years' observation and experience I know that except as an agent in freeing the foliage of dust or filth there is no necessity for the common practice of violent syringings, but much for the recommendation of its discontinuance in a majority of cases.

Every needful requirement of plants in the way of moisture can be afforded by the sprinkling of all available surfaces with water, keeping them wet, especially during the day, when evaporation is greatest, less sufficing at night, because the air is closer, colder, and the evaporation consequently less; and yet,

as before stated, in a dry atmosphere plants perspire in darkness, it is important that the atmosphere be moist at night, as it will, by thoroughly sprinkling at the usual time of closing, or from 5 to 6 p.m. in summer, along with the moisture given off from the evaporation troughs, and with this at night, and moisture available by day for evaporation, it is difficult to make out what more is required in the way of atmospheric moisture, or what benefit results from the leaves of a plant at night and for a considerable part of the early day, and in dull days, being kept dripping with water? Surely the evidence of its not being requisite is had from plants in a vigorous state throwing off the water accumulating during the night, disposed like drops at the margin of the leaves, as well as in minute specks over the leaf surface, clearly showing the inutility of wetting the leaves to saturation.—G. ASHBY.

ROSE SHOWS—A SUGGESTION.

ROSE growers and Rose-lovers are alike indebted to the correspondents of the Journal for their communications about the queen of flowers. To the influence of Rose shows much of the popularity of our national flower is undoubtedly due, and it behoves all who can to render them every assistance. As in most other cases, there are two points of view as to Rose shows—that of the exhibitors and that of the committees of management. From the exhibitors' standpoint two-day shows are, without question, to be condemned; but most committees of management know from painful experience that a one-day show is rarely remunerative, and it is this consideration alone which in a majority of cases has caused the prolongation of the exhibition over two days. Nowhere, I believe, have Rose shows been better managed than at Birmingham; and yet with a vast population, many enthusiastic amateurs, an exhibition hall unsurpassed in proportions and suitability, it has never been possible to obtain enough money in one day to cover expenses; and even with a two-day show and a liberal subscription list it has been just as much as the committee could do to make both ends meet. Exhibitors will do well to bear this in mind in agitating for a curtailment of the period during which shows should last, lest in their eagerness to gain their end they cause the extinction of Rose shows.

A number of proposals have been made to overcome the difficulty. One of them was warmly urged by its suggestor, who, as he was one of the founders of the Birmingham Rose Show, it is only fair to credit with a well-considered desire for the welfare of the Show, and it was to this effect: that instead of trusting to the general public for support, reliance should be placed on subscribers only; by this plan a very large part of the ordinary expenditure would be rendered needless. Thus, looking at the balance-sheet of one of these shows it would be found that the amount subscribed—about £160—would be sufficient to pay prizes, cost of printing schedules, and other incidental expenses. In such a case a single-day show might be held which would pay its way and enable better prizes to be paid; for, startling as it may be, it is yet a fact that the heavy expenditure incurred in decorating, music, printing, bill-posting, and advertising for company—expenses incurred to induce the attendance of the general public, has rarely or never drawn a sufficient attendance to cover the outlay, and consequently part of the subscriptions have been expended in paying for what the true rosarian has no interest in whatever.

After a good deal of experience I feel justified in saying that the general public is quite apathetic on the subject of Roses at an exhibition. Their criticisms, with which many who read these lines are probably familiar, show an utter ignorance of the essential excellencies of a Rose. They who attend those shows merely for their love of the flower, and because they wish to gain knowledge concerning new kinds, are all or mainly Rose-growers, and I feel sure an adoption of such a plan as is above indicated would meet their views and tell on the prosperity of the exhibition. The public who come merely for a lounge are in the way of those who want to gain information, and the public, as far as my experience goes, does not come in sufficient numbers to make financially any amends for the inconvenience of their presence. I would therefore suggest for the consideration of those show committees whether it would not be worth while to limit the attendance at Rose shows to those who possess subscribers' tickets, and to make Rose shows more interesting to rosarians by making them more select, and less expensive by avoiding the expenditure now incurred to attract the general public, which

is rarely recouped by their payments for admission. They will then also be able to limit them to a single day, and will thereby gratify the exhibitors and enable them to take part in more shows than at present is possible.

To some the suggestion which I have made may savour of exclusiveness. I can assure them that if they had had, as I have, nearly twenty years' experience of the public's ingratitude they would begin to wonder whether after all it is worth while troubling about the public. And besides, there is practically no exclusion of anyone, for I regard it as an essential part of the scheme that an abundance of admission tickets should be given to each subscriber in proportion to the sum subscribed. I maintain that the great cost incurred in decorating the exhibition room with ornamental plants, in music, advertising, bill-posting, &c., which items invariably represent more than the amount spent in prizes and the necessary expenses of a Rose show pure and simple, are expenses incurred to draw the general public; that the general public do not by their payments at the doors recoup the sums expended on their account; that rosarians care only for the Roses, and are hindered in their pursuit after knowledge by the presence of those who simply block the way; and that for the sake of placing the continuance of Rose shows out of the pale of improbability it would be better to ignore the general public altogether, and save an expenditure which is rarely remunerative. The company who would attend would be as a whole rosarians; the trade would get their orders, and the amateurs would be able unhindered to make their notes of novelties. If necessary I could easily give figures to support my position, but to managers of Rose shows this I feel sure is not necessary.—PHILANTHES.

HYDRANGEA FLOWERS.

I LIVE in the Weald of Sussex, but am surrounded by a great variety of soils. The Hydrangea is always pink in the clay soil, but always blue in the peat soil, which is about a foot deep on the Sussex iron ragstones. I have observed two Hydrangeas not more than 200 yards apart, one of which was blue the other pink, the former being in the peat soil.

Nothing makes so good a fernery as this ragstone, for the Ferns seed and grow very fast among the stones, as I have proved, having many rare Canadian Ferns growing freely.—LADY C.

ALFRISTON APPLE.

OBSERVING a note in your Journal that this Apple won the first prize as the best baking Apple at the Royal Horticultural Society of Ireland's Show, I am induced to give my experience of this valuable variety.

It is not an Apple usually to win a prize at an ordinary autumn fruit show, because all Apples are fresh at that time, and many are large enough to attract the notice of the judges; but to obtain honourable distinction in May implies that qualities are present of a valuable order—qualities not only of size, but of firmness, crispness, and that piquancy of flavour which is coveted in an Apple for baking purposes. The Alfriston I have long proved not only possesses all these but other good qualities, and I have frequently been surprised at not finding it mentioned in recommendatory lists of useful late-keeping Apples. The author of "The Fruit Manual," however, does not forget to note its value, for in the new edition of the work the Alfriston is highly spoken of; the history of the variety is also given, and also an outline illustration of the fruit. Might I suggest that this outline be added to the accompanying remarks, which I copy from "The Fruit Manual?" I ask this, not only because I fear that this valuable Apple is not sufficiently known, but further because I have met with instances where an Apple grown under the name of Alfriston is not the true variety. In his work Dr. Hogg has spoken as follows:—

"Alfriston (Lord Gwydyr's Newtown Pippin, Oldaker's New, Shepherd's Pippin, Shepherd's Seedling).—Fruit of the largest size, generally about 3½ inches wide, and from 2½ to 3 inches high; roundish and angular on the sides. Skin greenish yellow on the shaded side, and tinged with orange next the sun, covered all over with veins or reticulations of russet.

Eye open, set in a deep and uneven basin. Stalk short, inserted in a deep cavity. Flesh yellowish white, crisp, juicy, sugary, and briakly flavoured. This is one of the largest and best culinary Apples. It comes into use in the beginning of November and continues till April. The tree is a strong and vigorous grower, very hardy, and an abundant bearer.

"This variety was raised by a person of the name of Shepherd at Uckfield in Sussex, and has for many years been extensively cultivated in that county under the names of Shepherd's Seedling and Shepherd's Pippin. Some years ago a Mr. Brooker of Alfriston near Hailsham sent specimens of the fruit to the London Horticultural Society, and being unknown it was called the Alfriston, a name by which it is now generally known. By some it is erroneously called the Baltimore and Newtown Pippin."

The above remarks are both clearly descriptive and interesting, and will enable anyone to judge for himself whether he possesses the true kind. The description states that this Apple continues in use "till April," but for many years I have had it in use throughout May, and on that account I value it highly. About twenty-five years ago I assisted to plant an orchard of sixty Apple trees—two of a sort of thirty varieties. The trees were had from two places, but only one tree of Alfriston proved to have been correctly named, and this tree

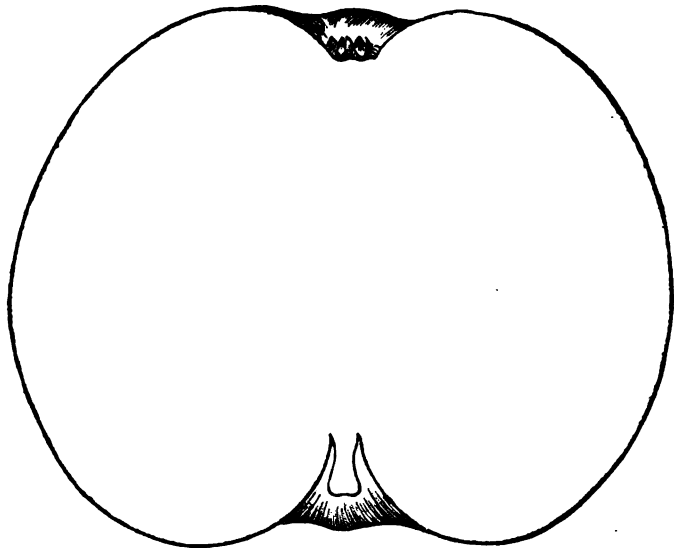


Fig. 114.—Alfriston Apple.

has proved itself to be perhaps the most valuable tree in the orchard. I say "perhaps" because of the near run of Dumelow's Seedling for the point of honour. Dumelow's Seedling commenced bearing sooner than Alfriston, but latterly the produce of the Alfriston has been the more valuable of the two.

The Alfriston is a vigorous-growing tree, proof, so far as I know, against canker, and is a free and certain bearer. Another useful quality it has—namely, its short-stalked fruits are firmly affixed to the spurs, and are not blown off during autumn gales to the same extent as many other kinds. I consider this to be one of the best of orchard Apples, as affording a supply of noble fruit of superior quality for culinary purposes, the fruit keeping firmly until the present time. A large conical-shaped Apple is often seen under the name of Alfriston, but it is not nearly so good as the real Shepherd's Seedling.—A NOBLEMAN'S GARDENER.

THWARTING HARES AND RABBITS.

It may be of use to your readers to know a simple and effective expedient for protecting the bark of young trees from the attacks of hares and rabbits.

The virgin cork used in constructing ferneries, &c., can be procured in pieces of all shapes and sizes, and is very easily attached to the stems of young trees at a trifling cost, and I have found it a complete protection from the attacks of hares

and rabbits; and specimen trees in parks or on lawns near dwelling houses can be saved from the mischief caused by dogs and cats.

The pieces of cork are easily fixed together with wire or strong twine, and are not unsightly if neatly placed round the stem of the tree.—WM. BAXTER SMITH, *Knowfield Nursery, Carlisle*.

ROYAL AQUARIUM GREAT SUMMER SHOW.

MAY 30TH.

AN Exhibition for which nearly £1200 were offered in prizes could not do otherwise than attract notice in the horticultural world, and the Exhibition which we now attempt to describe was consequently anticipated with more than ordinary interest by those who are identified with the cultivation of plants and fruit. The day was an unusually brilliant one, and rich was the display arranged so effectively in the central hall and entrance vestibule of the building. The Exhibition was without doubt the finest that has this year been seen in London, and was a treat both to gardeners and the general public such as is seldom afforded them.

The central position of the hall was mainly occupied by two bold oval-shaped groups, from the centre of which noble Tree Ferns and glossy-foliated Palms towered erect. These, surrounded by rich Orchids and massive Azaleas, and fringed with hardy Ferns, had an excellent effect. The connecting links of these ovals were composed of specimen Roses in pots, fringed with Bicolor Geraniums and with stove and greenhouse plants intermixed with Palms, also a fine collection of Crotons. On the south side of the hall the specimen stove and greenhouse plants and Pelargoniums were arranged—arranged, too, sufficiently low so that their effect could be seen to the greatest advantage. These massive groups were relieved by Tree Ferns at suitable intervals. The north side of the main building was occupied with Azaleas and ornamental-foliated plants, and the ends of specimen greenhouse plants, Tricolor Pelargoniums, and Calceolarias. At the entrance to the vestibule the fruit was arranged, the body of the vestibule being occupied by Filmy Ferns and mixed collections of ornamental plants, Gloxinias, Amaryllids, and fancy Pelargoniums.

Upwards of £1000 were provided for the plant classes, and £180 for fruit. Some of the most notable instances of the apportionment of this amount was in the Orchid classes, to which £193 was set apart, no less than £100 being provided in the amateurs' class for twenty plants, the first prize being £50, the second £30, and the third £20. In the classes for stove and greenhouse plants £134 was provided, Ferns £123, Pelargoniums £148, fine-foliated plants £72, Azaleas £66, Palms £55; the same amount being offered for new and rare plants. These are instances of liberality such as are seldom met with, and which could scarcely have had other than one result—a liberal response by exhibitors with the best examples of their skill. The judging was expeditiously done, and all the arrangements excellent. We now refer to the classes.

STOVE AND GREENHOUSE PLANTS.—In the amateurs' class for twelve stove and greenhouse plants the prizes were £25, £15, and £10. Mr. Chapman, gardener to J. Spode, Esq., Hawkesyard Park, had the premier position with a grand collection, every plant of which was in perfect order. *Chorozema Chandlerii* was 6 feet in diameter, and equally large was *Erica Cavendishii*. *Ixora coccinea* was very striking by the side of a massive example of *Clerodendron Balfourii*; *Dracophyllum gracile*, *Pimelea mutabilis*, *Erica eximia* superba, and *E. odora* rosea were also in superior condition, and the remaining plants—*Anthurium Scherzerianum*, an *Aphelexis* and *Hederoma* (now *Darwinia*) tulipifera—were in admirable form. Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, had the second place, also with a fine collection; *Statice profusa*, *Ixora Williamsii*, *Anthurium Scherzerianum* being really splendid, and all the rest very good. The third prize went to Mr. Tudgey, gardener to J. H. G. Williams, Esq., Henwick Grange, Worcester, for generally smaller yet healthy and fine plants, the most notable being a grand *Anthurium Scherzerianum*, a *Stephanotis*, *Dipladenia amabilis*, *Ixora Williamsii*, and *Darwinia tulipifera*. In the nurserymen's class for eight plants £15, £10, and £5 were the amounts offered. Messrs. Lucombe, Pince, & Co., Exeter, had the first place with a grand group, comprising two immense Azaleas; *Erica tricolor* Wilsonii and *Lindleyana*, highly superior; *Ixora coccinea*, a noble plant; a *Stephanotis*, *Clerodendron*, and *Aphelexis*, all in superior order. Messrs. Jackson & Sons, Kingston, had the second place with some splendid plants, the *Dracophyllum*, *Aphelexis*, and *Erica Exquisite* being perfect globes of 5 feet in diameter. Mr. B. S. Williams had the third place, his most notable plant being *Ixora javanica*. Prizes of about half the above amounts were also offered to amateurs for six plants. The first prize was awarded to Mr. Barrett, Pewsey, Wilts, for vigorously-grown and well-bloomed plants about 3 feet in diameter; *Genetyllis tulipifera*, *Erica eximia* superba, and *Aphelexis macrantha* purpurea were especially good. The

second honours were awarded to Mr. Child, gardener to Mrs. Torr, Garbrand Hall, for larger but rather looser plants; third prize going to Mr. Chapman, gardener to J. Spode, Esq., Hawkesyard Park, for still larger but not well-furnished plants. It is gratifying to see quality have its right place and count for more than mere size, which is not always the case at exhibitions. In the nurserymen's class for eight plants in pots not exceeding 6 inches in diameter Messrs. Jackson & Sons had the first place for irregular-sized yet well-grown specimens, comprising *Aphelexis*, *Genetyllis* (*Darwinia*), *Phenocoma prolifera*, &c.; Mr. B. S. Williams being second with a good collection. In the corresponding class for amateurs for the same number of plants Mr. Ward had the first place with an admirable collection of plants, most of which have been noticed at previous exhibitions; Mr. Tudgey having the second place, also with a very good group.

ORCHIDS.—The liberal prizes offered for these brought out a strong competition. In the amateurs' class for twenty plants the first prize of £50 went to Mr. J. Hubbersty, gardener to O. O. Wrigley, Esq., Bridge Hall, Bury, Lancashire. He had a magnificent specimen of *Calanthe veratrifolia* with thirty-two spikes of its pure white flowers, they were in splendid order; *Masdevallia Lindeni*, with about three dozen beautiful pale purple flowers; an exceedingly well-flowered plant of *Odontoglossum Phalenopsis*; *Saccolabium guttatum giganteum*, five spikes; *Thunia alba*, very strong, seven fine racemes; *Lelia purpurata*; *Masdevallia Veitohii*, a grand plant; *Dendrobium litseiflorum*, very well flowered; *Masdevallia Harryana*; *Vanda suavis*; *Odontoglossum crispum* with a score of fine spikes; *Cypripedium caudatum*, a nice plant with eleven flowers; a grand *Anguloa Clowesii*, which had three dozens of its large golden flowers. A. *uniflora* superba was really splendid; it was in excellent condition, and its peculiarly-formed flesh-tinted and spotted flowers had a charming effect in front of the broad deep green foliage. *Aërides Lobblii* had three good spikes. Fine large plants of *Cypripedium barbatum*, *C. niveum*, and a noble specimen of *Dendrobium nobile* completed the group. Mr. John Ward was second, winning the £30 with equally well-flowered plants, but the specimens were smaller: amongst them were some that have already been described in the reports of previous shows. Mr. J. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, was third, securing the £20 with a fine group, including excellent examples of *Cattleya Warnerii*, *Masdevallia Veitohii*, *M. Harryana*, and a fine form of the species named *M. Whitbourniana*.

For twelve Orchids (nurserymen) the prizes were £30, £15, and £10. Mr. B. S. Williams had the post of honour with a rich collection. The *Vandas* were in luxuriant health and fine bloom, and *Cypripedium navium*, *barbatum* superbum, and *biflorum*, very fine, as also were *Tricophylla crispata*, and *Saccolabium guttatum*. *Phalenopsis grandiflora* had a remarkably dense truss, and *Epidendrum vitellinum majus* was conspicuous by its brilliancy. Mr. Bull had the second place with small plants exceedingly chaste and well cultivated; Messrs. Jackson & Sons being placed third for a well-flowered collection, *Saccolabium retusum* having three racemes each 18 inches long. In the open class for eight plants the sums offered were £12, £10, and £8. Mr. Rutland, gardener to the Duke of Richmond and Gordon, Goodwood, had the first place. *Vanda suavis* had six spikes and thirty flowers, and *V. suavis* tricolor was very fine. *Aërides crispum* had two splendid spikes. *Cattleyas Mossii* and *C. Mossii* magnifica were remarkably fine, as also were *Dendrobium nobile* and *Cypripedium barbatum*, while *Oncidium sphecelatum* had about twenty spikes and countless flowers. This was a collection of the highest merit. Mr. B. S. Williams had the second place with an excellent selection; Mr. Child, gardener to Mrs. Torr, having the third prize for plants, amongst which *Cypripedium Stonei* and *Dendrobium formosum* giganteum were noticeable. In the amateurs' class for the same number of plants prizes of nearly the same amount were provided. Mr. Ward had the first place for a valuable group including a superb example of *Odontoglossum vexillarium* with twenty-four flowers, a superior *O. Bluntii* with nine spikes, and other admirable specimens. Mr. Hubbersty had the second place for a capital group. We were unable to ascertain the winner of the third prize either by searching amongst the plants or by referring to the official list of awards.

NEW PLANTS.—For twelve new plants, Orchids excluded, the prizes of £12, £8, and £6 were won—first by Mr. W. Bull, King's Road, Chelsea, who staged grand examples of *Cyathea Burkei* and *Fritchardia grandis*, *Dracenas*, *Crotons*, and the brilliant *Blandfordia princeps*; second by Mr. B. S. Williams with a collection of great value; and third by Messrs. W. Rollisson and Sons, Tooting, who had an excellent group, including their new Filmy Fern *Trichomanes Bancroftii*, &c. For six new plants not in commerce Mr. Bull was in his usual place—first, with *Aralia splendens*, a noble and distinct *Aralia*; *Dieffenbachia triumphans*, *Croton formosum*, *Dracena Goldiana*; *Sadleria cyathoides*, a striking and stately Fern with arched fronds, very distinct and fine; and *Ocrotus trilobus*. Mr. B. S. Williams had the second place with an excellently grown and valuable collection. For three new plants not in commerce

Mr. Bull was first with *Draena Goldiana*, *Dieffenbachia Carderi*, and *Aralia spectabilis*; Mr. Williams having the second place with *Cycas intermedia*, *Woodwardia radicans cristata*, and *Astrocaryum murmurum*, a robust Palm of great promise. For six plants never before exhibited in Europe Mr. Bull was again first with *Gymnogramma Chelsoni*, a noble variety; *Smilax Shuttleworthii*, a trailing plant with richly marbled cordate leaves 6 inches in length by 5 in breadth; *Maranta inscripta*, green with prominent silvery grey markings, distinct; *Gunnera granatensis*, a noble Aroid; and *Dieffenbachia majestica*. Mr. B. S. Williams was second with *Phaius fimbriatus*, a charming pure white flower with yellow-fringed lip; *Panax laciniatus*; *Croton Queen Victoria*, a striking plant with golden foliage 8 inches long and an inch broad; *Ficus ovalifolium marmoratum*, and *Ocrotia Williamsii* with creamy variegation, very distinct. For three new plants never before exhibited in Europe Mr. Bull again took the lead with *Bomarea Carderi*, a novel and beautiful plant trained round a trellis—this plant has Lily-like foliage and flowers rosy pink externally, internally creamy with brown spots, it is very striking and novel; *Martinsia Roezlii*, which promises to become a giant amongst Palms; and *Dieffenbachia princeps*, a sprightly and beautiful plant with a silvery midrib and spotted leaves. Mr. Williams was second with *Adiantum Williamsii*, a greatly enlarged form of *A. pedatum*, highly effective, and likely to become popular; *Croton Williamsii*, and *Ixora multiflora*, apparently well named, seeing that half of the bulk of the small plant consisted of its flower trusses. Messrs. J. & B. Thynne, Glasgow, were third with *Pteris serrulata Baroni*, an unnamed *Hectia* and *Dieffenbachia*.

AZALEAS.—In the nurserymen's class for eight plants the prizes of £12, £8, and £6 went to Messrs. Jackson & Sons, Kingston; C. Turner, Slough; and Messrs. Ivery & Sons, Dorking, in the order named. In Messrs. Jackson's group *Grand Crimzon* was most exuberant and effective; Mr. Turner's plants consisting of the superior varieties which he has previously exhibited; Messrs. Ivery's also consisting of small plants in good varieties. £10, £6, and £4 being devoted to amateurs for six plants; Mr. Child, gardener to Mrs. Torr, Garbrand Hall, being first with some of the finest oval-shaped plants which have this year been exhibited, the plants being about 5 feet high and 8 feet in diameter, and perfectly bloomed. The second prize went to Mr. Ratty, gardener to R. Thornton, Esq., Sydenham, for plants well flowered, but smaller than this exhibitor usually stages. Mr. Ley, Croydon, had the third prize. In the open class for fifteen Azaleas the same amounts were offered. Mr. Turner was first with small well-bloomed plants of the best varieties extant; Messrs. Ivery being second also with good varieties. The plants in these classes were numerous, but were not as a rule superior, the season being somewhat late for them.

ERICAS.—In the open class for eight plants the prizes of £10 and £8 were taken by Messrs. Jackson & Sons with a very fine collection, the plants being well bloomed and trained; and Mr. Carmichael, who had the second place also with good specimens. In the amateurs' class for six plants the honours were divided as follows: Mr. Ward being first; Mr. Hinnell, gardener to F. A. Davis, Esq., Surbiton, second; and Mr. Tudgely, gardener to J. H. G. Williams, Esq., Henwick Grange, Worcester, third. *E. ventricosa grandiflora* and a small plant of *E. profusa* in Mr. Ward's group were the most noticeable, and all were good; and in Mr. Hinnell's *E. ventricosa grandiflora*, *E. ventricosa magnifica*, and *E. tricolor dumosa* were in splendid condition. Another open class for six plants in pots not exceeding 12 inches in diameter was provided, Mr. Ward securing the premier place with medium-sized healthy specimens. The second prizes were awarded to Mr. Legg, gardener to S. Ralli, Esq., Olapham Park, who staged remarkably bright plants in perfect health and good variety; and Messrs. Jackson & Sons, who also staged a capital collection. The plants in this class were about 2 feet in diameter, and it was not easy to decide which collection was really the best. The exhibition of these plants was both extensive and good; there were a few straggling specimens, but generally the plants were healthy, well trained, and well bloomed.

FINE-FOLLAGED PLANTS.—In the open class for twenty plants in pots not more than 12 inches in diameter nor less than 10 inches, we can only say that the prizes were won by Mr. Bull and Mr. B. S. Williams in the order named with collections worthy of these famed horticulturists. In the nurserymen's class for nine fine-folliaged plants in pots not more than 12 nor less than 10 inches in diameter, the prizes were £12, £8, and £6. Mr. Bull had the first place for *Encophalarctos amplatus*, *Dioon edule*, *Phormium tenax variegatum*, *Pandanus Veitchii*, *Draena Baptistii*, and *Paulinia thalictrofolia*. Mr. B. S. Williams had the second place for an excellent collection, in which *Draena Shepherdii* and *Baptistii* were very fine; this group included a most effective plant of *Courouliu recurvata variegata*. In the corresponding amateurs' class the prizes and conditions were the same. Mr. Legg, gardener to S. Ralli, Esq., was first with a grand group, but almost hidden. *Ocrotia volutum* is perhaps the finest plant in cultivation; *Dieffenbachia*

nobilis was in splendid order, *Alocasia macrorrhiza variegata* was highly effective, and the Palms, &c., in an admirable state. Mr. Douglas, according to the official list, had the second place, but we were unable to find his plants to note their names and condition.

FERNS.—For eight stove and greenhouse Ferns (amateurs), £10, £8, and £6 were provided, the amounts being secured by Mr. Child, Garbrand Hall; Mr. Penfold, gardener to Rev. A. H. Bridges, Beddington House, Croydon; and Mr. Strahan, gardener to P. Crowley, Esq., Waddon House, Croydon, in the order named, the whole of the exhibitors staging good collections. In the corresponding class for nurserymen the successful competitors were Mr. Bull and Mr. B. S. Williams, both of whom staged superior collections. For four Tree Ferns (nurserymen), Mr. Bull was first with noble "trees," *Cyathea Burkel*, a wonderful specimen 10 feet high, and equally fine examples of *Cyathea dealbata* and *Dicksonias*. Mr. Williams had the second place with some grand examples from Holloway. For two Tree Ferns (amateurs), Mr. Sheen, gardener to E. Brooke, Esq., Cain Wood Towers, Highgate, was placed first for a splendid pair of *Dicksonias* 10 feet high, and having fine heads. These were very superior examples of culture. Mr. Hinnell had the second place, also with highly creditable specimens. In the class for six *Adiantums* (open), Mr. Hubbersty was placed first for luxurious examples of *A. trapeziforme*, *A. cultratum*, *A. excelsum*, *A. multifidum*, *A. tenerum*, *A. macrophyllum*, and *A. farleyense*. Mr. Smith, gardener to A. Cooper, Esq., Twickenham, was second; and Mr. Sheen, gardener to E. Brooke, Esq., Cain Wood Towers, Highgate, being third for a collection greatly superior to the second-prize group owing to some mistake in staging. *Adiantum farleyense* was the finest of its kind in the Exhibition. *A. trapeziforme*, 5 feet through; *A. concinnum*, *A. gracillimum*, *A. cuneatum*, and *A. formosum*, all in superior condition. For six Filmy Ferns Mr. B. S. Williams was first with a group of these charming plants, including *Todea superba pellucida*, *Hymenophyllum demissum*, *Trichomanes auriculatum* and *Trichoidium*, and a fine plant of *T. radicans*. Messrs. W. Rollison & Sons had the second place, in which *Trichomanes Bancrofti* and *T. alatum* var. were the most attractive; the third prize going to Mr. E. Tudgely, Henwick Grange, his collection being notable as containing good plants of *Trichomanes radicans* and *Todea superba*. For twelve hardy Ferns Messrs. Jackson & Sons had the first place with an excellent collection containing one of the finest plants of *Lomaria chilensis* ever exhibited. The collection also included a new Fern of undoubted elegance and value—*Athyrium Filix-femina Jacksonii*—a plant combining vigour with gracefulness in a remarkable degree. The remaining plants, *Struthiopteris japonica*, *Lastreas*, *Anthuriums*, &c., were all very fresh and good. Messrs. Ivery & Sons were second with a capital group; and Mr. Stone, gardener to C. Walton, Esq., East Acton, having the third place with a good collection.

For eight *Gloxinias* (amateurs), Mr. J. A. Battram, Tonge House Gardens, Lower Norwood, was first with vigorously-grown well-bloomed specimens; Mr. Hammond, gardener to S. Hunt, Esq., Brooklands, Lea Bridge Road, having the second place for plants which had been injured in transit to the Show. For eight *Gloxinias* (nurserymen), Mr. R. Kinghorn, Sheen Nursery, Richmond, was the only exhibitor and had the first place with a collection of well-grown plants in superior varieties. For twelve *Amaryllids* (open) Mr. Goddard, gardener to H. Little, Esq., Cambridge Villa, Twickenham, was placed first for plants characterised by extreme vigour and in rich and varied colours; Mr. Baxter, gardener to O. O. Hanbury, Esq., Belmont, East Barnet, having the second place also for an effective collection, the colours being very good, but the petals being rather more pointed than is desirable in these fine flowers. For eight *Roses* in pots (open) Mr. Turner was accorded the first place for the large plants which have won him such fame as a Rose-grower; Messrs. Paul & Son, Cheshunt, being second for equally fine specimens. The general impression was that these collections should have been placed equal first, and later in the day the awards were revised, and Cheshunt was placed on an equality with Slough.

PELAGONIUMS.—For eight show varieties (nurserymen) the prizes were £12, £8, and £6, and the winners of them were Mr. Turner, Slough, and Messrs. Dobson & Sons, Woodlands Nursery, Isleworth. Mr. Turner's collection was far the most superior in culture and varieties. The sorts were the same as those named in our report of the Regent's Park Show last week. The third prize was not awarded. In the corresponding amateurs' class the prizes were of the same amounts, and were secured by Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, with such grand specimens as he alone can produce, the plants being perfectly trained and well bloomed, and varying from 8 to 6 feet in diameter; Mr. James, gardener to W. F. Watson, Esq., Redles, having the second place with excellent examples of culture, the plants being from 8 to 5 feet in diameter; Mr. Weir, gardener to Mrs. Hodgson, The Elms, Highgate, having the third place with smaller plants. For six fancy *Pelargoniums*

(nurserymen) Mr. Turner had the first place for medium-sized plants of *Mirella*, Mrs. Hart, Excelesior, Jewess, Princess Teak, and Henry Bailly; Messrs. Dobson & Sons having the second place with plants of ordinary merit. For six fancy *Pelargoniums* (amateurs) Mr. James, Redlees, was unopposed and unapproachable with his splendid specimens, each 4 feet in diameter, and perfectly trained and bloomed. Eight variegated or tricolor *Pelargoniums* (nurserymen), the prizes of £10 and £6 went to Mr. Coppin, The Nursery, Croydon, and Mr. Pestridge, The Nursery, Brentford, with medium-sized well-coloured plants; an extra prize being awarded to Mr. Meadmore, The Nurseries, Romford. In the amateurs' class for six plants Mr. J. Lover, gardener to J. Roberts, Esq., Shirley Cottage, Croydon, was first with plants from 1 to 2 feet across, in good health and colour; Mr. Hinnell, Surbiton, being second for smaller yet perhaps brighter plants; Mr. North, gardener to F. Hill, Esq., Brentwood, having the third place for compact and nicely grown specimens. Mr. North also exhibited a seedling *Lobelia*—*Little Emily*, a type of *L. Paxtoni*, admirable for growing as a pyramid for conservatory decoration. For twelve bicolor or gold and bronze *Pelargoniums* Mr. Meadmore had the first place with well-grown plants a foot in diameter, W. E. Gumbleton being the best; Mr. Pestridge, Brentwood, being second for medium-sized well-coloured plants; the third prize being awarded to Mr. Lambert, gardener to H. W. Segelcke, Esq., Dulwich, The Cedar in this group having an intensely dark zone.

PALMS.—Twelve Palms in pots not exceeding 8 inches in diameter (open), the first and second prizes went to Mr. Bull and Mr. Wright in the order named for superior collections. For six Palms in pots not exceeding 16 inches in diameter Mr. Bull, Chelsea, was again first with a valuable and glossy group, comprising *Geonoma pumila*, *Kentia Moorei*, very fine; *Hyophorbe Verschoffii*, and *Latania borbonica*. The second prize went to Messrs. R. & J. Thynne, Glasgow; *Martinezia erosa* and *Cocco Weddelliana* being very good; Mr. Ley having the third prize with a superior group, quite worthy of having been placed equal second with the Glasgow group. For four Palms in pots not exceeding 16 inches in diameter (amateurs), Mr. Harrow, gardener to H. Bessemer, Esq., was placed first with *Cocco Weddelliana*, *Kentia Fosteriana*, *Livistonia altissima*, and *Thrinax elegans*, all fine plants well cultivated; Mr. Butler, The Gardens, St. Dunstan's, Regent's Park, being second with capital plants of *Geonoma pumila*, *Cocco Weddelliana*, *Areca Intensa*, and *A. Verschoffii*. An extra prize was awarded to Mr. Strahan for four very good plants. For six *Crotons* (open) Mr. Bull had the premier place with plants in superb health and colour, comprising *C. volutum*, spirale, *Weismannii*, *majesticum*, *Cooperi*, and *imperiale*. Mr. Harrow was second with large well-grown plants in good sorts, Mr. Williams being third with large plants. For twelve *Draconas* (open) the first and second prizes were £10 and £6, and the winners of them Mr. Bull and Mr. Williams, who both staged superior collections in sorts which have been previously enumerated.

For twelve hardy perennials in pots (open), the first prize went to Mr. Parker, Tooting, for a fine collection, *Pinguicula grandiflora* being in splendid condition, *Saxifraga nepalensis* (pyramidalis) charming; *Oreohis foliosa*, *Trollius grandiflorus*, *Spiraea palmata*, *Irises*, *Lupines*, &c., attracting a large amount of public attention. Messrs. Rollisson & Sons, Tooting, were second with a highly effective group, *Alyssum Weisbiickii* being very distinct and noteworthy; Mr. Roberts, gardener to W. Terry, Esq., Fulham, being third for large newly-potted plants. For eight *Paeonies* in pots Mr. Parker, Tooting, was the only exhibitor, and had the first prize for showy plants which could not be otherwise than effective in shrubby borders, the single and double white varieties being very effective. Mr. Parker also had the first prize for a moderate pair of *Yucca filamentosa variegata*. For twelve bunches of out blooms of hardy herbaceous plants the prizes went to Mr. Dean, Ealing, Mr. Roberts, and Mr. Parker in the order named. These collections attracted considerable attention, Mr. Dean's being the most distinct, every bunch belonging to a different genus, and hence had the post of honour.

There were several miscellaneous exhibits. Messrs. Hugh Low & Co. brought a grand new *Cattleya*, *O. Bluntii*, the flowers being of the purest white except the throat, which was a soft yellow, the lip being beautifully fringed. Mr. Laing exhibited fine new Bicolor *Geraniums*; Mr. Turner, new *Pelargoniums*; and Messrs. Jackson & Sons, decorative *Pelargoniums* Charles Outram and Miss Bradshaw, both of them floriferous and effective.

FRUIT.

For a May show this was one of the best collections seen in London for many years, and reminds us of the excellent shows of fruit that used to be held at the Crystal Palace twelve or fifteen years ago in that month. There were thirteen dishes of Black Hamburg Grapes, and the quality of the first-prize dishes is very good indeed. The first prize goes to Mr. J. Akehurst, gardener to S. Copestake, Esq., The Grove, Kentish Town. The bunches were small but even in size, berries large, and with a fine bloom. Mr. Bannerman, gardener to Lord Bagot, Blithfield

Hall, Rugeley, was second with bunches in his usual fine style. The third prize went to Mr. Edwards, gardener to W. B. Tristram, Esq., Fowley, Liphook, Hants, with large well-coloured bunches; but the bloom was a little rubbed, or they would have had a higher position. For three bunches of Black Prince the first prize went to Mr. Geo. Holliday, gardener to J. Norris, Esq., Castle Hill, Bletchingly; and the second to Mr. J. Bolton, gardener to W. Spottiswoode, Esq., Coombe Bank, Sevenoaks. They had both fairly good bunches, but far behind what used to be shown. For three bunches of any other Black kind a grand dish of Madresfield Court from Mr. G. Grimmett, gardener to J. Wilmot, Esq., Pine House, Isleworth, was first. Mr. Bannerman was third with small but well-coloured Muscat Hamburgs.

For three bunches of Muscat of Alexandria there were nine competitors; the first prize being awarded to Mr. J. Douglas for an excellent dish. The berries are immensely large and well coloured for the season. Mr. G. Grimmett has the second prize with three meritorious bunches. The third goes to Mr. W. Bates, gardener to W. H. Punchard, Esq., Poulett Lodge, Twickenham. He had large bunches, but the berries were not quite ripe. Most of the other dishes were unripe. For Buckland Sweetwater Mr. Douglas had by far the best: his three bunches were large and well coloured. Mr. G. Parkhouse, gardener to T. Holman, Esq., Hawkhurst, was second; and Mr. A. Phillips, gardener to A. Moss, Esq., The Mills, Chadwell Heath, was third, but the berries were unripe. For three bunches of any other white kind Mr. Douglas was again first with splendid Canon Hall Muscats. The second prize going to Mr. Bannerman for well-ripened Foster's Seedling; and Mr. R. Gilbert, gardener to the Marquis of Exeter, was third for the same variety. For Frontignan Grapes Mr. P. Edwards was first with three beautiful bunches of Grizzly Frontignan. Mr. J. Hepper, gardener to C. O. Ledward, Esq., The Elms, Acton, was second, and Mr. Bannerman third with very good dishes of the same sort.

For two Queen Pines Mr. J. Bland, gardener to D. Whitehouse, Esq., Newport, Mon., was first with a good pair. Mr. H. Plummer, gardener to B. Thornton, Esq., Cannon Hill, Merton, was second with small fruit. For any sort of Pine other than Smooth Cayenne and Queen, Mr. Douglas was first with a good Charlotte Rothschild; Mr. J. Deaville, gardener to J. E. Bannerman, Esq., Wyaston Leys, Mon., was second with a Montserrat, and Mr. Plummer third with a Black Jamaica. Pines were very poorly represented.

There were but three dishes of Peaches exhibited, the best being one of Noblesse from Mr. J. Maber, gardener to C. Allbush, Esq., Stoke Court, Slough. Mr. P. Edwards was second with Royal George, and Mr. M. Davis third with Grosse Mignonne. There were two dishes of Nectarines. Mr. J. Maber was first with Hunt's Tawny. Mr. G. Holliday was second with a good dish of Lord Napier; although this sort is not so highly coloured as Hunt's Tawny, it is richer-flavoured. A good dish of Brown Turkey Figs from Mr. Coleman, gardener to Earl Somers, Eastnor Castle, Leicestershire, gained the first prize in its class. Mr. G. T. Miles, gardener to Lord Carington, Wycombe Abbey, Bucks, showed a splendid dish of Elton and one of Black Circassian Cherries, and won the first prize in each class with them.

In the class for Strawberries of the British Queen and Dr. Hogg type there were but two competitors. Mr. Douglas was first with highly-coloured British Queen, and Mr. Barley, Valentines, Ilford, was second with the same sort. There were eight competitors in the class for Sir J. Paxton and Sir C. Napier type. Mr. O. Raffill, The Gardens, Tredegar Park, Monmouth, was first with a splendid dish of Black Bess; Mr. J. Edwards was second with Sir C. Napier; and Mr. Douglas third with President.

Melons were well shown, ten fruit being staged in each class. In Green-flesh Mr. Coleman was first with Victory of Bath, Mr. G. Holliday second with Golden Queen, and Mr. J. Atkins, Lookinge Gardens, Wantage, third with Heckfield Hybrid. In Scarlet-flesh Mr. C. Howe had a very fine Read's Scarlet-flesh, and won the first prize; Mr. E. Tudgey, gardener to J. H. G. Williams, Esq., Henwich Grange, Worcester, second with Scarlet Gem; the third prize going to a nice Hero of Bath from Mr. O. Raffill.

There were two Vines in pots from Mr. J. Deaville, gardener to J. N. Bannerman, Esq., Monmouth. They are of the Black Hamburg variety, but not first-rate; a third prize was awarded to them. Mr. G. T. Miles showed two very fine dishes of Tomatoes named Stamfordian. It is a grand sort, shaped like Hathaway's Excelesior, but larger than that sort is usually grown.

This must close our notice of this extensive and excellent Exhibition, a notice which has no pretence to include everything which was exhibited. The Show was, by its mode of arrangement, difficult to report, and the work of judging was no sinecure. Nothing was left undone to render the event a success. The officials, under the direction of Mr. Wills, were assiduous in their several duties, and the Summer and Winter Garden

Society has the honour of having produced one of the best shows that has been seen in London for a great length of time. The prize money was promptly paid during the first day of the Show.

VINE CULTURE.

I CANNOT call to mind the exact date when I suggested in this Journal the planting of Vines 2 feet apart, and the cutting-down every alternate Vine yearly. Since that time I have had reason to modify my plan. The principle on which I founded my former plan was this: I imagined that when a Vine was cut down it would have nothing to do but to grow-up a stout rod which might be fruited largely. In this I was correct for the first year, but experience showed me that after that time the Vines lost their vigour, and the reason why I came to this conclusion was as follows:—The whole of one of my vineries, 110 feet in length, became infested with the mealy bug. After failing to eradicate this pest by various remedies, I ordered the whole of the Vines to be cut down to the last spur. The young rods grew stout and strong to the top of the house, but I found that in the course of two years the Vines began to lose their health and vigour. On examining the roots I found that every main root was dead, and that the Vines depended entirely on their support from fresh rootlets which had been thrown out in a circle. I had all the dead roots removed, and took the opportunity of removing the soil at the same time, and in its stead placing layers of turf, decayed manure, sand, and the ashes of an old furnace which existed on my premises about 150 years ago. The Vines are now as vigorous as they were before they were cut down. To any person pursuing the plan of cutting down Vines every alternate year I should recommend preserving the three last spurs, cutting-down two of them as soon as all the roots are in action; by this time the roots will be in a condition to throw their whole support into the single rod.

I will here refer to some experiments I made last year, which having proved successful I am now carrying out on a larger scale, having given orders for the plan to be adopted in vineries extending 250 feet in length. Some years ago I had a conversation with the late Dr. Lindley on the storing-up of sap in the bare stems of old Vines. It had occurred to me that a large amount of nutriment might be stored-up in these bare stems. He informed me that he had observed in a workshop at the top of a factory a Vine which had grown-up on the outside wall to the height of three or four storeys, when it was admitted into the workmen's room, where it had become strong and fruitful. On this principle I commenced growing half rods on the old stems of some of my Vines, thus: I allow a rod to grow-up from the first spur to two-thirds of the old stem, when it is stopped; I then allow another rod to grow from a spur halfway up the old stem, and a short rod to grow from the very point of the stem. These three rods were cut down at the end of last year: the first rod halfway up the stem, the second rod at the end of the stem, and the third to one eye. The whole of the wood has been thoroughly ripened, and every eye has thrown-out from two to four strong bunches. This plan seems to answer better than the whole-rod system, which often broke unevenly owing to the wood being imperfectly ripened.—OBSERVER.

ROSE EXHIBITIONS.

THERE is without doubt much that is unfavourable in Roses being exhibited two days consecutively, but I think some suggestions might be made to meet the difficulty; and unless something be done Rose committees would seem to lie under the imputation of giving only the faded flowers of the second day for the multitude's shillings. There are some good and fair reasons, not merely financial, why Rose shows may sometimes be held for two days. As regards the bare expenses of the one day they may be met by the sale of tickets previously to the day of exhibition; but should that one day be wet, what pleasure or compensation have the poor ticket-holders? The second day then gives the public a fair chance.

I would suggest to the Crystal Palace and other companies who give two-day Rose shows to offer in addition to their prizes a grand premium prize, say for seventy-two varieties of Roses shown in the three stages of bloom—full, half-blown, and in bud—three trusses of each, with their own foliage and buds. This arrangement would be very interesting and instructive to the Rose-loving public, as fully exhibiting the characteristics of each variety, and to this end a gentleman

offers a prize at the West of England Rose Show. A prize for seventy-two thus shown would be easier for nurserymen to cut than the orthodox number of forty-eight trebles all in one stage of growth.

Let us look practically at the extra expense to the exhibitor, so much complained of. A few more Rose boxes and a man, not necessarily a foreman, to stay over the second day and dress-up the stands by removing from each treble the one faded full-blown specimen and arranging in its place the others half-blown and bud, now nearly expanded; and with these materials to work upon, if a small hamper of fresh buds were sent up by night train to the man in charge, a very good show could be easily kept up on the second day at a comparatively trifling expense both to society and exhibitor.

As a Rose judge I will not deny that second-day Roses and buds will frequently be jaded and unfit for exhibiting for a prize, but treated in the manner suggested the general public would not be so disappointed the second day.—H. C.

FERRARIA UNDULATA.

THIS plant is said to have found its way to us from the Cape of Good Hope as far back as 1759. Ferrarias are plants



Fig. 115.—*Ferraria undulata*.

possessing sterling merits, but are somewhat difficult to cultivate in our climate. It is no use attempting to grow this race of plants unless our minds are made up to succeed. They are adapted for in and out door decoration, and may be turned to good account for both purposes. If intended for outdoor cultivation, a warm and sheltered border should be chosen and prepared for their reception. The soil should be removed to the depth of 18 inches, and filling up the space with a compost of good sandy loam and peat with charcoal dust and a little coarse sand well mixed together, raising the soil above the surface an inch or two to allow for settling. Thorough drainage should also be provided. This should be done some time before planting, that the soil may become a little firm previously to the reception of the bulbs. These may be planted in April from 4 to 6 inches deep, and are all the better if surrounded with silver sand. They should at all times be sheltered from heavy rains, and when the plants appear above ground they should be protected from late spring frosts. The flowers, though short-lived, are both curious and beautiful.

Plants are increased by seed and offsets. By some they are said to be hardy, but in our uncertain climate it is much best to lift the bulbs after they have perfected their growth. After careful drying they may be stowed away in dry sand, kept from frost, and planted again in spring. The seed may be

gathered when ripe and sown in the spring in a sandy compost in well-drained pots and placed in a cold pit. The seedlings while in a young state require careful tending, as they are liable to damp off. The *Ferrarias* may be grown in pots for plunging when required, and when past their best they can be removed to mature the growth of the plants. There are several kinds, but the accompanying figure is sufficiently illustrative of the family. *Ferrarias* ought to be found in many more gardens than they are at the present.—N.

TREE FERNS.

TREE FERNS are not so numerously grown as they should be. In many large establishments where indoor plants are cultivated in great variety a good Tree Fern is not to be found. Few standard foliage plants are more elegant. A large house is not necessary for their accommodation; a plant with a 3-foot stem in a small house just looks as well as a 10-foot-high one in a lofty house. They are not all tall-growing species. Beautiful little standard specimens of the *Lomarias* require little more head room than a common *Adiantum*. Of course in small houses tall forms cannot be grown, but this need not exclude the whole race. With a clean stem of a foot or two and a nicely furnished head there is no prettier tree grown than *Lomaria gibba*. This species, like all the others, takes a considerable time to attain to any great elevation; in fact *Lomaria gibba* never does reach a great height, from 2 to 3 feet being a first-rate elevation for it. It looks exceedingly well raised among dwarf ferns or fine-foliage plants. It succeeds perfectly in a warm corner of the greenhouse, but to grow it superbly the stove is the place for it.

For the elegant embellishment of large houses *Dicksonia antarctica* is capitally adapted. It is the very finest of all Tree Ferns. Good specimens of it have a clean straight stem 10 feet high surmounted with about 3 more feet of fronds. An object of this kind has a grand effect in a large conservatory. This Fern does not require more than a greenhouse or conservatory temperature and treatment altogether. It is a native of New Zealand. Numbers of the stems are imported into this country with not a vestige of green about them, but when potted and placed in a close humid atmosphere they soon begin to emit and unfurl their massive fine green fronds, which spread out and arch in a most graceful manner. When the trunks have started into growth they should not be retained in a close warm atmosphere longer than a good beginning is made. If grown for a considerable time under such conditions, and ultimately transferred to a cool airy house, the fronds generally droop and decay. They do not make such rapid progress in a cool house, but after vitality is fairly set a-going it is much better in the end to let development take place in a comparatively cool situation. This Fern is qualified to associate in the greenhouse with tall hardy *Dracenas*, *Palms*, &c., and no better or more handsome tall plant could be selected to grow as a solitary specimen. Plants may be placed here and there in *Camellia* beds, and when their heads are seen above the *Camellias* they have a very fine appearance.

Some of the *Cyathea*s make beautiful Tree Ferns. The trunks of *C. dealbata* range from 2 feet to 6 feet in height. It makes an excellent companion for the *Dicksonia antarctica*, but it has no advantage over that fine Fern. Altogether the development of the *Cyathea* is on a smaller scale. The fronds stand out rather stiffly, and do not extend so far as the *Dicksonias*.

Alsophila australis is a splendid tall Fern and quite distinct from any yet mentioned here. In some instances it has a stem exceeding 6 feet in length. The fronds are very strong and do not droop much, but rise up more in an upright direction. It is well worth growing for variety among other Tree Ferns. To grow it to its full extent it requires plenty of head room.

The general cultivation of Tree Ferns is not very difficult. They cannot be grown to any great size in a pot; tubs are the best to put them in. Some of these are made round and others square. The round tubs are the most convenient. They should be neatly made with the best oak wood, so as to withstand the moisture for a number of years. A tub 2½ feet in diameter and the same in depth is capable of holding a large plant for a long time. The bottom should be well perforated. Tree Ferns are not easily killed with water at the roots, but at the same time they distinctly abhor stagnant moisture there. Good drainage is of great importance: too much attention cannot be given to this to begin with.

Dicksonias, *Cyathea*s, and *Alsophilas* succeed admirably in a mixture of peat, a little loam, and plenty of silver sand. The peat and loam should be used in a rough fresh state, and in planting it should be rammed very firmly about the roots and stem. A vacancy of 2½ inches should be left on the surface to facilitate watering. After shifting, watering at the root has to be done carefully, or the soil may become rancid before the young roots penetrate it. When the roots become matted they must never be allowed to become thoroughly dry, or the fronds, both old and young, will wither up quickly, and no after-attention will refresh them. When once a plant is caught in this state it takes months to recover; besides, when watering is neglected for any length of time the whole ball becomes so thoroughly dry that it is very difficult to get it completely moistened again with ordinary watering. In a case of this kind the best plan is to place the entire root overhead in water for a number of hours. When young fronds are being formed at any time they are greatly benefited by being syringed once or twice a-day. Full-grown plants also require to be syringed occasionally to prevent the red spider and thrips doing mischief.

Lomaria gibba seldom grows out of pot bounds. Good plants of it may be had in 10-inch and 12-inch pots. Little or no loam should be employed in potting it, but good drainage is absolutely necessary to its well-being.—J. Murr.

AMONG THE FRUIT TREES.—No. 1.

At length the change has come, the keen north-eastern blasts which have been dominant for so many weeks have departed with all their scathing power and deadly violence, and now we have a soft south-western breeze with genial showers, bringing hope to us once more, for I for one must own to having entertained something akin to a feeling of dismay—almost of despair—as to our fruit prospects this year, with the palpable damage to foliage and blossom constantly before my eyes. I think we have no unmixed evil in gardening; certainly the present and all similar trials afford some good valuable lessons—hints from Nature how best to grapple with some of the difficulties arising from such unseasonable weather, and thus these very evils are made to render their remedies clearer to our minds. We learn from watching the development of blight how best to check and cure its ravages, and it is my purpose to call attention to a few things which have struck me while they are still fresh and clear to me.

Peaches and Nectarines are especially interesting just now. The only trees quite healthy are on a west wall, the entire growth being strong and clothed with foliage perfectly free from blight. All those upon a south aspect have suffered in some degree; blistered and curled leaves and clustering aphides are very prevalent, being most abundant at every wind-swept angle and corner. At one of these points three trees are just now a curious and interesting sight—the end, and therefore the most exposed tree, has quite three-fourths of its leaves curled, and in every curl we have found some dozens of aphides. The next tree has about two-thirds of diseased foliage, and the third has not more than a third part affected. Infinite pains have been taken with these trees. Some few blistered leaves have been picked off, and every leaf and stem brushed with a camel's-hair brush or sponged with clean water some half dozen times. The syringe has been played freely after each sponging, to remove any stray insects and to give the foliage a rinsing. Syringing alone would prove quite ineffectual as a remedy in so bad a case as this, the leaves being so much affected as to check the entire growth. I have felt some anxiety about these trees, knowing that a weakly spring growth points to unripe wood in the autumn. What was really required here was a close daily inspection during the prevalence of ungenial weather, and a prompt clearance of the insects as they appeared. This I could not manage, consequently the trees have sustained a check from which they will hardly fully recover this season.

Some other trees on a south wall with a clear space of not more than 20 feet between it and a belt of wood have much of the foliage affected by blister. I did not remove it while the cold weather lasted, but left it on as affording some protection to the sound leaves. I attribute the severe blistering to the violent rushing of cold wind between the wall and wood; strange to say, there are no insects upon any of these trees.

The coping-boards have done good service as usual, screening the trees so effectively that although the outer foliage has sustained much damage yet the crop is an excellent one, the fruit having set freely, and is now swelling fast. I repeat, there-

fore, that such trying times afford instructive lessons of much practical value. My deductions from the passing season may thus be embodied—

1. A south-west aspect is the best for Peach and Nectarine trees on open walls.

2. Coping-boards, valuable at all seasons of the year, are especially so in spring to protect the blossoms, almost invariably ensuring a good crop of fruit.

3. Exposed angles or any position at all liable to cold draughts from the north-east should be avoided, and trees in such positions should have shelter afforded them.

4. Plenty of clean water and painstaking are the best antidotes for the attacks of insects.

5. In a cold spring defer removing any young growth or blistered foliage as long as possible, in order to afford the healthy growth the benefit of its shelter.

6. When the young growth is thinned let it be done thoroughly, retaining enough stout shoots for the following season, and no more.

7. Avoid overcropping.—EDWARD LUCKHURST.

BELVOIR CASTLE.—No. 2.

THE SEAT OF THE DUKE OF BUTLAND.

RESUMING my notes on the spring gardening I must reluctantly quit the Duchess's garden, and passing under an arbour formed of strong oak posts, where Mr. Ingram intends planting a collection of shooles climbers, we come to the old terraces. Here we have on all sides another fairy scene—a dazzling blaze of floral grandeur which I cannot find words to pourtray. There are three terraces about 2 feet above each other planted in ribbon lines in the order they are named. The first terrace had rows of Arabis, Aubrietia, Primroses, Erica carnea, and Daisy anemifolia. The second terrace, beginning at the back row, with Saxifraga cordifolia, Alyssum saxatile compactum, Tulips, Aubrietia, red and white Daisy, and blue Pansy. The third had for the back row Alyssum saxatile compactum, Variegated Thyme, Arabis, red Daisies, and dark Pansy. Turning to the right on the opposite side the walk was another group of beds, which I cannot leave without a passing remark. They are on a sloping bank, and are like beautiful pictures set in a framework of living green. The first bed was Russian Violet, just over; the second bed, groundwork of Saxifraga, with rings of red, white, and blue Hyacinths in distinct colours, and an edging of Sedum glaucum and Sedum acre aureum; the third bed had a white-flowered Erica in the centre, encircled with Arabis albidia variegata, next Myosotis dissitiflora, and a margin of Lamium maculatum aureum; the fourth bed was mixed Hyacinths, dwarf Wallflowers and Tulips, with a raised edging of Echeveria secunda glauca, which had stood out all the winter. But the most effective bed in this group was in the form of a star, and was really the most happy arrangement of colours I ever saw. The blending of the variegated Daisies, creamy Primroses, Aubrietias, Arabis, &c., produced a charming effect. The mixed bed is not the least effective feature of the spring garden. It is also the experimental bed for proving recent introductions. In this bed I noticed a large assemblage of plants put out for trial, intermixed with a few old tried friends. The following appeared worthy of note, and may give an idea of what the mixed beds contain:—Myosotis dissitiflora, Scilla siberica and bifolia, Wallflower very dwarf (Ware's strain), dwarf Heaths, Anemones of sorts, Hepatica angulosa and other sorts; Epimedium, a plant of slender foliage and Orchid-like flowers, but too fugitive for general massing; Pansy, yellow and blue; Alyssum saxatile compactum; Cardamine; Polygala Chamæbuxus, a dwarf hardy shrub that blooms very early, and grows about 6 or 9 inches high; Orobis vernus, double Primroses of sorts, and Aubrietia (Ingram's strain). The last bed in this group was planted with seedling Oxlips, a very choice strain, edged with Euonymus radicans variegata.

We now ascend a flight of rugged steps, and reach the rocky heights above. There is no small degree of skill observable in the formation of this rocky garden. Every stone lies on its natural bed, and appears in its natural place. There is a great degree of naturalness and artistic excellence displayed, yet at the same time the usual rock-builders' trick is avoided of piling-up bare stones merely for the sake of a rugged surface. It presents quite a ruinous appearance with the rough parts of the stones fully exposed, but with plenty of space left for the full development of the individual plants. It is well known that Mr. Ingram possesses considerable knowledge as a geolo-

gist, and this he has brought into exercise in the formation of this grand piece of rockery. The great object aimed at has been to imitate the bold and natural cliffs which abound on every hand. The rockwork at Belvoir I consider the most perfect imitation of natural rock that can be found, and as the stones year by year become more coloured by the weather it may be mistaken for natural rock. Here every plant was at home, and blooming in great profusion. There were large healthy clumps of Gentiana verna, which formed a striking contrast with the brilliant Doronicum austriacum; broad patches of Aubrietia, in proximity to a fine variety of Lunaria. Cyclamens also appeared to find a genial home, and Primula cortusoides amena was throwing-up numerous flower stalks, and would soon be all aglow with its charming flowers. There were also clumps of Heaths, Variegated Thyme, Myosotis dissitiflora, Lithospermum prostratum, and Sedums and Saxifragas in great profusion. On every inch of space and in every niche and crevice there is some object of interest worthy of observation. On the lower side of the main walk was another large rockery, and indeed the natural formation of the ground favours this style of gardening. Mr. Ingram has taken advantage of the position, and has appropriated it to the most ornamental of purposes. The plants that draped this rockery were much the same as those noted above.

Near the rockery were several other groups of beds, all beautiful in their arrangement. The first had in the centre Saxifraga crassifolia and White Hyacinths, next a belt of scarlet Tulips, with another of Oxlips, then a broad band of pink Aubrietia, this again encircled with red Daisies, and an outside margin of Gentiana verna. A very striking bed was carpeted with Sedum acre aureum dotted with Erica carnea and yellow Tulips, with Heuchera lucida for an edging. The last combination I shall mention was Rhododendron ferrugineum and Saxifraga crassifolia, interspersed with yellow Daffodils and edged with Euonymus radicans variegata. The Rhododendrons many of them had pushed into bloom with the fine weather that occurred the first week in April, though the heavy fall of snow had marred the early flowers; but the unexpanded buds were just ready to open, and not only herbaceous and alpine plants, but also the Rhododendrons appeared to rise superior to climatic disadvantages. In warm and cosy nooks clumps of Camellias were planted, and large bushes that had stood the storms of a dozen winters were pictures of health and beauty.

I had only time to take a hasty run through the Kitchen gardens and take a rapid glance at Mr. Ingram's extensive reserve grounds for his spring bedding plants. These gardens are approached from the Castle by a broad walk passing through a wood of remarkably fine trees. The entrance gates, of which there are three, have fine supporting piers, and are spanned by Gothic arches of noble dimensions. The garden contains within the walls eight acres, and with the outer enclosed parts and orchard comprise an extent of fifteen acres. There is a range of lean-to hothouses 300 feet in length, and subdivided into six compartments. Five of the houses were devoted to Vines. Most of the Vines have been in bearing for the last twenty-five years, and never fail to produce satisfactory crops of fruit. The houses are started in rotation, so as far as possible to circle the year with a supply of Grapes. The last fruit had been cut for several weeks, but what remained in the fruit room was in fine condition. The earliest house would be started about the commencement of the new year, and the bunches were rather more than half developed. Each Vine had its complement of fruit to support; but it is Mr. Ingram's practice to allow abundance of foliage, which keeps up a corresponding root action. The foliage of the Vines in the houses that were started was large, and bore the impress of health and vigour. One house was entirely devoted to the Muscat of Alexandria, a second to Black Hamburgs, third to Black Alicante, and two others to mixed late sorts. The sixth house in the range was for Peaches. These were trained near the glass, and the trees were carrying a handsome crop of early fruit. These houses are all used for plant culture and Strawberry forcing. On the many shelves were plants in all stages of growth, some with fruit ready to gather, and others just throwing up their frames of bloom. I noticed some gigantic Azaleas that had been brought from the Castle as large as ordinary Laurel bushes, also fine Palms and other ornamental-foliage plants. Large quantities of plants are grown for decorative purposes, and when they have stood in various parts of the Castle for five or six weeks at a time it requires all the skill of the gardener to restore them to their

former beauty. On the outside of the garden were other ranges of span-roofed houses devoted to the culture of Pines, Ferns, stove plants, and the general run of greenhouse plants. In the stoves *Gardenias* were grown extensively, and they were in fine condition. Large quantities of cut flowers are required, and for this purpose appropriate plants are cultivated to meet the demand, which occurs to the greatest extent from November until January. One house with shelves near the glass was used expressly for Strawberries.

The garden is surrounded with well-built walls about 12 feet high, and covered with a fine collection of healthy fruit trees. It is not exactly square, but about twice the length north and south as it is east and west. This gives a greater proportion of east and west walls than it does of north and south. The collection of Pears is choice and extensive, and Apricots are largely grown. The Peach wall is protected with a coping of glass, which projects about 2½ feet from the wall, and hexagon netting is hung in the front of the trees. They were in robust health, and a fine crop of fruit was set. My friend Mr. Pearson of Chilwell has many times condemned this system of Peach-growing on the open walls; but while such results can be obtained as are realised at Belvoir, and with such a season as the present one, Peach-growing on the open walls will maintain its ground despite what may be said to the contrary.

The soil of the garden is naturally most unsuitable for ordinary garden purposes, it being a cold clay, and the work of improving it has been a long and heavy task. Year by year small portions of the subsoil have been brought to the surface, and all sorts of combustible materials have been charred and added to the ground.

Along the main kitchen-garden walks are broad herbaceous borders, where many a once-despised plant is nursed and cared for. In the reserve garden Mr. Ingram had a strong army to fall back upon in case of gaps being made in his beds by the enemy. Hyacinths, Tulips, &c., are allowed, I believe, to remain in the reserve ground for two years, and when taken to the flower garden they bloom quite equal to imported bulbs. Among the herbaceous plants I noticed *Corydalis nobilis*, *Doronicum austriacum*, *Erodium manestavi*, *Potentilla Douberi*, and many others that I had not time to note.

I have given but a faint idea of this princely place, but majestic as are the gardens the cultivator is more than equal to the task. I received a large amount of courtesy, and my visit to Belvoir will long remain a bright spot in my memory.—B.

KIDNEY BEAN CULTURE.

I MAY add just a line or two to your correspondent's excellent notes. I use roots mainly (of course I am obliged to use seed occasionally when the roots are too large from age, which they are after some three years or so). I prefer them for two reasons: first they come sooner into bearing—that is, plants from seed and roots, both being above ground on the same day, the root plants would be in flower from eight to fourteen days earlier than the seed plants; and another advantage is that they flower in profusion earlier too. The second reason is that they are not, as a rule, so rank in growth, being shorter-jointed, and therefore more beans in a given space. By following Mr. Taylor's method by growing them in pots to prolong their season one-year-old roots may be used to advantage, or even two-year-old roots if not too large, for only the small extremities ought to be cut off. The roots keep best in what we term here a "pit," the same as Potatoes are stored in, but the frost must be entirely excluded, for the least frost is fatal to Kidney Beans just as to Dahlia roots.—GEORGE LEE, *Market Gardener, Clevedon*.

THE PEA WEEVIL.

I GATHER from an answer in one of your contemporaries and from such books as I have access to treating on the subject, that the habits and history of this insect are not perfectly known to entomologists. There ought to be no difficulty in following it up if it is looked for in the right quarter, and I will give one or two facts which may possibly assist in directing attention there. Examine Beans or Peas in March which have been harvested in an infested spot during the previous summer (not late in autumn), and on some of them will be seen little round light-coloured spots not much larger than a pin's head; they are easiest found on Broad Beans, some of which have two such spots, but generally only one. There is no hole visible; the outer skin is, as far as I know, perfect, but

as soon as this is cut the insect, if arrived at maturity, will escape with almost as much vitality as it possesses at the present moment on the Pea leaves. Whether the seed is sown or not the insect makes its escape in spring—generally, I think, in April. Early-sown seeds are not hurt by it, probably because they germinate too soon for the perfect development of the insect; neither are late-sown seeds (unless supplied from a midseason crop close by), because the insect has escaped and probably perished before being placed in a suitable medium. Seed more than one season old is of course perfectly free. The above facts, I think, will suggest looking in the neighbourhood of the flowers of the Pea and Bean for a certain portion of this insect's history.—WILLIAM TAYLOR.

[Every gardener must have observed the edges of the young leaves of his Peas and sometimes of his Beans eaten away in scollops or semicircular pieces. This is often done by the *Sitona tibialis*, but still more frequently by another of the short-antenned beetles, the Lined Weevil, *Sitona lineata* of some naturalists, and *Curculio lineatus* of others. In Scotland it is commonly called "the Cuddy," or Donkey, from its grey colour. In our drawing it is magnified, but the line by its side shows the natural length. The whole body is grey, and marked with black lines; the antennae reddish; the eyes black. Mr. Spence found five or six upon a Pea seedling. They survive the winter sheltered beneath moss, &c., and in bad weather at all seasons retire under stones only to re-appear with the sunshine.]



Fig. 118.

EARLY WRITERS ON ENGLISH GARDENING.

No. 14.

EDWARD LISLE.

EDWARD LISLE was the only son of Sir William Lisle, and born in 1666. He was a justice of the peace in Hampshire, where he settled at Crux Easton, about the twenty-seventh year of his age, and in 1693 or 1694. He immediately determined to make the study of agriculture one of the chief amusements of his life. In pursuance of this resolution—not only in the neighbourhood where he lived, but in his journeys either in Dorsetshire (where he had property) or to Leicestershire in visits to his father-in-law, Sir Ambrose Phillips of Garendon, or to his own estates in Wiltshire and the Isle of Wight—he made it his business to obtain information from the most reputable farmers.

He was a decided anti-Malthusian, for he had twenty children, seventeen of whom survived him. He died in 1722, and was buried at Dibden on the 18th of June in that year. As he died intestate we have been unable to trace the disposal of his property. A marble tomb marks the place of his sepulture in Dibden churchyard, for the brief inscriptions on which we are indebted to the rector, the Rev. Edward Carlyon.

"Here lies inter'd
EDWARD LISLE of Crux Easton in this County, Esqre.,
Who was snatch'd from his neighbours,
His wife, children, and country,
By a fit of Apoplexy,
Lamented by all,
June 19th, in the Year of our Lord
1722,
Aged 56."

"Here lyeth ye body of Mary,
The relict of Edward Lisle, Esqre.,
Late of Crux Easton in this County,
Daughter of Sir Ambrose Phillips
Late of Jarranton, in the County of Leicestershire.
She departed this life the
7th day of August, A.D.
1749, in
The 77th year of her age."

He continued gathering notes relative to the cultivation of the soil until the time of his death, and evidently intending to publish them, for he had prepared an index of them. That intention was carried out by his eldest son Dr. Thomas Lisle, who dates the preface in 1756 from Burelders in Hampshire. The volume is entitled "*Observations in Husbandry*, by Edward Lisle, Esq., late of Crux Easton, in Hampshire, 1757."

There is a chapter devoted to the "Orchard or Fruit Garden," in which are notes from Cook and other authors, but also his own observation. Thus he states, "I went with my gardener into my crab-stock nursery to choose some stocks for grafting on. Some I had raised from crab kernels, but had never been

removed; these I would have had him graft, but he refused, saying that they had only a tap-root; such stocks removed may be able to maintain themselves, but it is a different thing to maintain their grafts." Another chapter is on the flower garden, and a third on the kitchen garden, but they are very brief, and chiefly extracts from previous writers.

His notes on "Poultry" are, with the exception of one

fiction.' The plant, however, was rediscovered in quantity by Mr. Burke, a gardener of the Earl of Derby, who was sent out at that nobleman's expense to accompany Mr. Zeyher on an expedition for collecting plants and animals. Living plants were cultivated at Knowsley, Lancashire, Lord Derby's seat. In 1874 H.E. Sir H. Barkly, the Governor of the Cape, obtained from Henkries, near the Orange River, two fine specimens of



Fig. 117.—EDWARD LILLIE.

statement, extracted from other books, and that one statement is a ridiculous tale of crows and hens interbreeding.

The notes on pigeons are brief and unconnected.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

HOODIA GORDONI. *Nat. ord.*, Asclepiadaceæ. *Linn.*, Pentandria Digynia. Flowers pale lemon.—"This very remarkable plant was discovered near the Orange River by Colonel Gordon. He made a drawing on the spot, which Masson published in his '*Stapelia Novæ*' (1796). For nearly half a century nothing more was known of it than this figure, which seemed so extraordinary 'that our *Stapelia* growers used to speak of it as a

this plant. One unfortunately died, but the other reached Kew in perfect condition, having been carefully suspended in a wooden box without earth. Sir Henry Barkly remarks that plants of *Hoodia* as well as *Piранthus* usually have a single tap root with branchlets spreading out laterally at some depth, and that they often die when transplanted. The Kew plant appeared at first to be in excellent health, and after flowering in 1875 made some growth, but at the beginning of the present year it rotted off at the crown without apparent cause."—(*Bot. Mag.*, t. 6228.)

ODONTOGLOSSUM PRÆNITENS. *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Flowers yellow, blotched with purplish brown.—"O. prænitens is a native of New Grenada, whence it

was collected by Mr. Gustave Wallis for Messrs. Veitch, who forwarded a specimen in April, 1875."—(*Ibid.*, t. 6229.)

VITEX LINDENI. *Nat. ord.*, Verbenaceae. *Linn.*, Didynamia Angiospermia. Flowers pale purple and white.—"Apparently a shrub or small shrubby tree, cultivated in the Palm house at Kew during the last three years, received from Mr. Linden in 1872, and a native presumably of New Grenada. It flowers annually at Kew about the month of May."—(*Ibid.*, t. 6230.)

CALECOLARIA TENELLA. *Nat. ord.*, Scrophulariaceae. *Linn.*, Diandria Monogynia.—"A very elegant little plant, of a bright glossy green, with pale golden flowers spotted with red within the corolla. It was discovered by the German traveller Poeppig in 1823, and gathered subsequently by the English botanical collector Bridges growing in sandy places and on wet rocks near the rivers of the Andes, and in Valdivia, and has since been collected by Lechler, Philippi, and various other botanists up to an elevation of 4-5000 feet. Seeds of it were sent by Mr. G. Downton when travelling for Messrs. Veitch in 1873. It appears to be quite hardy, and like many other Chilean plants yet to be introduced, including not a few *Calecolarias*, it will prove an attractive ornament to the rock garden."—(*Ibid.*, t. 6231.)

ABUNDO CONSPICUA. *Nat. ord.*, Graminaeeae. *Linn.*, Triandria Digynia.—"This, which is perhaps the most beautiful Grass known, was long ago introduced into England through Kew. It was discovered by Banks and Solander during Cook's first voyage, and gathered during his second voyage by Forster, who published it in his '*Florulae Insularum Australium Prodromus*' in 1788. It abounds throughout the island of New Zealand from the Bay of Islands to Otago, and in the Chatham Islands, growing in wet places, but is found in no other part of the world. It is the *Toe Toe* and *Kakaho* of the natives, who use the culms for lining their houses with a kind of reed matting. Though long grown and increased, and a most ornamental plant for greenhouse and conservatory culture, holding its splendid shining panicles for months, it is seldom used for indoor decoration, and is rarely seen in the open border, where it resists an ordinary winter. In general habit it resembles the *Glycerium argenteum*, but is smaller and incomparably more attractive, both from its elegant habit and the brilliant lustre of its pale straw-coloured silky spikelets. It was introduced into Kew about the year 1845 probably by the late Dr. Sinclair, B.N., and holds its flowers almost throughout the year."—(*Ibid.*, t. 6232.)

NECTARINES.—"Rivers's Orange is described by Mr. Badolff as having large flowers, kidney-shaped glands, and full-sized fruit, which ripens a week earlier than the Pine Apple Nectarine. Mr. Tillery notes that he finds Mr. Rivers's description of it correct, 'as large, melting, with the rich saccharine flavour of its parent, the Pitmaaston Orange, but ripens about a week earlier.' Both it and the Pine Apple, he adds, are far better than Hunt's Tawny, or any other yellow-fleshed Nectarine, for general cultivation. *Emmerton's White* has large flowers and kidney-shaped glands, and Mr. Badolff notes that it is full-sized, and comes in a week or ten days after Rivers's White. It ripens at the end of August or beginning of September, and is a freestone, with a rich vinous flavour. Dr. Hogg, who calls it White Nectarine, describes the fruit as being of large size."—(*Flor. and Pom.*, 3 s., ix., 109.)

CHAPTERS ON INSECTS FOR GARDENERS.

No. 8.

It has been a subject of rather amusing speculation to some people of leisure whether Noah in his strange freight of animals included any insects. Certainly, we are authoritatively informed that he gathered into the Ark "creeping things;" but the Orientals of some thousands of years ago used this and other phrases applied to animals in a very unscientific manner. "Creeping things" doubtless sometimes meant insects and molluscs, yet the words might also designate such creatures as a tortoise or a frog, possibly even several of the diminutive mammals. Those who hold that the Flood was only partial, and the preservation of selected animals an act of symbolic meaning, of course have no need to account for the continuation of insect life during this crisis in human history; but those who believe the whole globe was inundated, yet whose imagination at its utmost stretch cannot suppose thousands of species of insects were housed and fed in the Ark during the period, find themselves driven to various theories, none of them without their difficulties. If no insects were amongst the selected occupants of the Ark it must surely have had some insect

visitors or permanent residents, species infesting animals or feeding on the different substances stored for food. I scarcely think the sons of Noah occupied themselves with entomological investigations; had they done so, amongst other species they would have found most likely the larvae of numerous flies which find in the "droppings" of animals kept in confinement a wholesome food, and assist in its decomposition. The history of many of these is little known even yet, like that of the family of the Diptera, which I have next to notice, called *Scenopinidae*. The flies, small creatures with black bodies and reddish legs, may be noticed on the walls of outhouses and stables. Their larvae are not individualised from the host of "maggots" devouring faecal matters. Yet it is observable that the economy of these and similar species has its bearing upon horticulture, since, wherever stable manure and the like substances are made use of, there is a risk that the larvae it may contain will survive the manipulation it undergoes, and transfer their attacks to the roots of plants or to seedlings. Hence it is that some have advocated the employment of none but artificial manures, or at least of natural manures which have been so far decomposed that they no longer contain animal life except in its lowest form.

In finishing-off my summary of this large and important order of insects I have to notice some of the most pertinacious foes of the gardener, and some also of his best friends. Friend and foe, however, in the same order do not invariably come into collision, and we find several of the groups of predaceous flies attack and kill various small species. It is curious to notice, too, that "the biter is bit" not unfrequently, as may be witnessed during the summer season by those having an eye open to insect doings. Flies whose business in life it is to prey upon others fall victims themselves—perhaps to more powerful creatures of the insect race, perhaps to ever-hungry birds, perhaps to the ill-directed zeal of some horticulturist who cannot always stop to discriminate; and, indeed, it is not without trouble that we ascertain what species are helpful to us. Some of the species in the family of the Empidæ have been called Snipe flies. They rather resemble the *Asilidæ* already named, but are smaller on the average. The small round head bears three-jointed tapering antennae; and the tongue, popularly known as the "beak," is displayed by the insect while on the wing. In many species the legs are long and spiny, enabling the flies of this family to grasp other insects they may seize, and suck their juices. Flies belonging to the genus *Empis* are common in field, woodland, and garden, being seldom seen without another insect in their grip, which may be of the same order, or frequently one of the feeble-winged Caddis flies, or a small Neuropteran. In certain seasons the Empidæ destroy many of the Tortricidæ, moths which are developed from the leaf-rolling caterpillars with voracious propensities. A few of the species have males that are flower-lovers and not predaceous; but in the majority both sexes are busily engaged in insect-killing, flying in the bright sunshine by preference with a rapidity which enables them to secure the objects they chase. A very frequent fly in gardens and conservatories belongs to the genus *Hilara*, minute, yet recognisable by the curiously swollen first joint of the feet or tarsus, which would interfere with its grip of another fly, yet it is presumed to attack small fry of the Gnat family. Here and there in the country, generally towards evening, the Empidæ may be seen assembled in swarms over the surface of a pond or stream, suggesting that the larvae may be aquatic. Some, however, have been discovered feeding on decaying vegetable substances.

The next family, the Dolichopidæ, are also beneficial, though to a less extent than the Empidæ, as they are less abundant in gardens. When seen there it may be taken for granted that they will do no harm, as they are almost entirely predaceous. The tongue is inconspicuous, and body somewhat shorter than in the last family, while in a number of species the thorax and abdomen are metallic, and the wings also lustrous. In their movements they are excessively rapid, and as agile in running as in flying. A Dolichope has been noticed gliding easily over the surface of still water, evidently seeking prey. All belonging to the family are of this habit, so far as is known, though it is a little amusing to read one author's comment on these flies, his assumption being that because they are active therefore they must be predatory. This does not necessarily follow; Nature might have endowed them with speed, as is actually the fact in various instances throughout all orders and classes, in order that they should escape foes; just as the well-trained legs of a soldier may certainly enable

him to run upon his enemies, but they will also serve him to beat a rapid retreat from them. The history of the larvæ of the Dolichopidæ has yet to be unearthed—literally so, for it is believed that they are subterranean feeders.

I must merely quote the unmelodious names of three families which come next—that is to say, the Lonchopteridæ, the Platyperidæ, and the Pipunculidæ. The flies in these are not numerous, their habits are obscure, and as they rarely appear in gardens they do not immediately concern us. Hence we pass to the Syrphidæ (sometimes incorrectly called dragon flies), a family of many genera. Despite the varieties in size and figure we can recognise these flies without difficulty by the large head, peculiarly flattened behind and rounded in front, so that, as Mr. Staveley says, it seems to be all face; and certainly the flies are not wanting in “cheek,” for they will audaciously settle on the human hand and insert the tongue between the pores of the skin, returning, even if driven away two or three times. This tongue, which is of good size, is bent in the middle, occasionally projecting into a sort of snout. On the whole I think this may be reckoned as valuable a family to the gardener as any one in the order, making deduction for the fancies of a few larvæ of the genus *Mirodon*, which have been caught burrowing into the bulbs of Liliaceous plants. “I need not enlarge,” as the old divines used to say, upon the several genera, as there have been already published in this Journal full accounts of the habits of some familiar species. The “hawk flies” of the genus *Syrphus* are generally banded, and owing to the great muscular force they possess they vibrate the wings with such rapidity as to well-nigh render them invisible when they are poisoning themselves over flowers. Like the rest of the mature flies in the family they are flower-lovers, possibly now and then predatory, but I do not think they damage petals in the way some other flies do. As wholesale devourers of aphides, the leech-like, assiduous, though unpleasant larvæ of the *Syrphidæ* deserve our hearty thanks. The *Volucellæ* have a marked resemblance to humble bees—a circumstance adapted to their habits, as they are parasitic on these Hymenoptera, and therefore enter their nests without exciting alarm. The larvæ of the *Volucella* is small-headed, but armed with a pair of keen mandibles, and manages to devour deliberately the larvæ of the bee. *V. pelucens* takes its name from the singular appearance of half the abdomen, which is colourless and semi-transparent; this fly intrudes on various bees, also visiting the nests of the common wasp. On the whole we may probably consider these as friendly insects. Under the family of *Syrphidæ* are classed the drone flies, common enough in gardens; and from the circumstance that they make a dull buzzing or humming, and that some of them twist the abdomen in a bee-like style, they are reputed to be bees; but they are stingless and not injurious to horticulture. The name “drone,” however, scarcely suits them, as they are far from sluggish. The larvæ are mostly aquatic; it is only needful to refer to the well-known one of *Eristalis tenax*, the “rat-tailed maggot,” concerning which a reverend naturalist discourses so affectionately, and which he seems to regard as a useful deodoriser and disinfectant provided by Nature, nor need we debate the point with him. The gardener who wishes to make acquaintance with it may easily discover the species in butts of stagnant water.

The *Conopidæ*, an odd little family, have larvæ parasitic within the bodies of bees. The flies resemble somewhat those insects, but they have a long projecting elbowed proboscis, which is not formidable, being unaccompanied with mandibles or lancet; hence the *Conopidæ* do not touch other insects, resorting only to flowers. By what means the females contrive to place their eggs on the bodies of living bees has not been satisfactorily made out. And so we pass to the immense family of the *Muscidæ*, before which even entomologists stand in perplexity, so various, yet often so similar, are the hosts of species it contains. The habits of the flies, too, are very diverse; there are some that are flower-lovers, some predatory, some partial to sweets of all sorts, some meat-eaters, and some blood-suckers. It is only necessary to name house flies, blow flies, dung flies, bluebottles, and greenbottles, to bring before the mind's eye unpleasant visions of insect-annoyers or causes of positive loss. The whole family presents, however, one well-marked feature which identifies its members—the thick short proboscis with its two-lobed extremity. In size the species run down from the stout noisy *Musca* proper to the minute flies that have leaf-mining larvæ; but even of these it could hardly be said in the words of an old proverb, that if you put them in your eye you would see none the worse, for

when they enter the eye, despite their tiny proportions, they cause a good deal of pain; and on these summer days they seem to have a fancy for flying straight at the eyeball, fascinated by its glare perhaps. The flies of the genus *Stomoxys* draw blood from men and animals; breeding as the larvæ do in dung they are troublesome about houses and gardens. In general terms I might say that the flies of the family are more hostile to the gardener than the larvæ; perhaps about three-fourths of the larvæ feed in decaying animal and vegetable substances, or are parasitic on other larvæ. Still the depredations must be confessed of the larvæ belonging to the genus *Anthomyia*, hostile to the Onion, Cabbage, and Lettuce; of the Cherry fly (*Vitalis Cerasi*), of the Rose fly (*Pala Rose*), and many more. In some genera, as in *Phora*, we have larvæ which are injurious to plants, and others parasitic upon caterpillars. And in the genus *Tachinus* upwards of 160 species are enumerated, the larvæ being all parasites, not invariably on Lepidopterous larvæ, as they have been discovered on larvæ of beetles and bees, and even on spiders. None of the dung flies do harm in the garden; a few, indeed, destroy other insects, the *Scatophagæ* especially thus busy themselves.

Among the flesh flies, I may add, we have the singular circumstance of flies depositing larvæ, or even pupæ, in one or two species.—J. R. S. C.

NEW BOOK.

A Plain Guide to Good Gardening. By SAMUEL WOOD. London: Crosby, Lockwood, & Co., Ludgate Hill.

THAT title precisely describes the nature of the book, for it is plainly written—indeed, its great merit is its plainness. It contains practical notes on the cultivation of flowers, fruits, and vegetables; also notes on soils and manures, with hints on the laying-out of grounds and the erection of glass structures; it is copiously illustrated. This is not a book for skilled gardeners so much as for amateurs and that numerous class of men known as jobbing gardeners, and especially those who have “taken up the business” after a few months’ preparation in wheeling soil in some gentleman’s garden. But jobbing gardeners when competent (as many of them undoubtedly are) have not always an opportunity to do themselves credit, and on this point the author has the following sensible remarks:—

“A jobbing gardener, above all men, should be a good gardener, and if one be fortunate enough to secure such a man he should have the liberty to attend to the garden whenever he considers this to be necessary, and not be limited to a certain day. A little work done timely and judiciously may double the value of a crop. And, as a rule, after a fair general understanding as to the requirements of the employees, the gardener should not be interfered with.”

Also on the management of small gardens good advice is given, thus—

“There is one error commonly committed in regard to villa gardens—namely, a wish to grow a “little of everything,” which generally means not growing anything well. This is not the way to perfection. For instance, if there are but twenty square rods of kitchen garden it is folly to attempt to supply a family with every variety of herb and vegetable from such a garden; and it would be a better economy of time and expense to limit these small spaces to a few of the earliest and best sorts.”

Turning to the chapters on fruits we open at random and find some remarks apropos to the present period of the year. Our author says on page 61—

“At the very critical time of the stoning of the fruit of Plums, Cherries, Apricots, and even Peaches, liquid-manure dressings will be found most beneficial; far more so than heavy dressings of dung during the spring or autumn. For it is evident that the principal reason why stone fruit falls off at this time is because the plant cannot supply nourishment equal to the demand; and this liquid food is applied just in the condition and in such necessary proportions as trees thus progressing require. Without this liquid manure, from the great evaporation at this time of the year, and the small amount of nutriment found in the soil by the slow progress of the feeders in search of it, the fruit entirely falls.”

We pass on to flowers, and pause at a chapter on a subject which has been alluded to somewhat frequently of late—blue Hydrangeas. On these flowers the chapter runs as follows:—

“In some localities a blue Hydrangea is difficult to obtain, and when it can be had it is considered a thing out of the common way, and, of course, the grower has good credit attached to his genius. I know of a locality where lovely blue Hydrangeas are naturally produced. That locality possesses a large

amount of iron, tin, and munda in the soil, and, although peat, it will not grow Heaths at all. The blue may be produced anywhere by first growing the Hydrangea in peat, then supplying it with the necessary element, and this can be produced artificially by keeping tin and iron ore in the water with which the plants are watered; but I would advise those who wish to grow this plant to produce blue flowers to get some of the peat, so famous for producing it, from Dartmoor, where it constantly flowers blue."

On the operations of gardening only one extract is made. Not many will find fault with the advice given on hoeing:—

"Hoeing should be done carefully and constantly, but never in wet weather; nevertheless, let hoeing be done in time,

'For one year's seedling
Brings seven years' weeding.'

Besides taking the nutriment out of the soil which the crop should have, every weed is destructive of so much of the soil's virtue, and in conjunction with the crop acts like two crops; therefore ply the hoe freely as soon as weeds appear above ground, whether the land is cropped or not. The hoe should not be drawn too deeply into the soil, for then some weeds only become partly buried with sufficient earth to nourish their growth and seeding. In hoeing it is important to draw the hoe just under the roots of the weeds, and to hoe every inch of the surface if the land is foul. All the surface should be hoed—not hoeing 6 inches and leaving 8 inches untouched, with simply some earth drawn over it, as is too frequently done."

One extract is given on manures, and that one of the most common and familiar and, at the same time, most valuable, yet apt to be overlooked. The following may act as a reminder:—

"Soot is a very powerful manure applied at the rate of 1 lb. to the rod; it abounds in ammonia, and consequently possesses stimulating power in a remarkable degree. Too much soot per rod will drive vegetation beyond what is desirable. One part of soot and two of guano possess more stimulating ammonia than any proportionate quantity of any other manure extant. Soot forms an exceedingly rapid stimulator for Peas, Lettuce, Carrots, Spinach, and most crops in a liquid state at the rate of half an ounce to two quarts of water, given so as to soak down to the roots. Always give soot whilst the plant is in an active state. Most persons make soot enough to manure a whole garden for the year."

These extracts show the character of the book and prove the appositeness of its title. It details the practice of every well-managed garden, which is precisely what skilled gardeners are acquainted with, and, on the other hand, precisely what the unskilled desire to know. This issue is a second edition of the book, and if a third is called for we strongly advise that its revision be entrusted to some one who is competent to correct the literary inaccuracies which mar so many of its pages. Capital letters are employed where the letters should be small, and small letters are used where capitals are required. The orthography is also faulty. For instance, "Pansey" with an "e" is a somewhat antiquated mode of spelling, and *Wistaria* is given with two "e's" when it ought not to have one—thus, "*Westeria*." It is, nevertheless, an useful book—a plain record of reliable practice.

FUNKIAS.

RARELY do we see Funkias in any quantity except it be at some of the nurseries, where these plants are beginning to occupy somewhat prominent places. It is next to impossible to say too much in favour of Funkias. To form any idea of the effect they are capable of producing they must be seen in quantity, and when so grown, and grown well, their magnificent foliage and graceful habit will vie with and put into the shade many of the occupants of our glass houses. I know of no race of plants that can surpass this charming group for producing a distinct effect both in pots and borders. I believe that most, if not all, are quite hardy.

They are moisture-loving plants, and do not object to partial shade, but they should be provided with efficient drainage, and should not suffer from drought. They will live in most kinds of soil, but to have them in perfection they should have special provision made for them either on rockwork or in borders, both under glass and in the open air. A mixture of good sandy loam and peat in equal parts, a little thoroughly decomposed dung, a little charcoal dust, and coarse sand, to the depth of 20 inches, will afford them a good medium to develop themselves in.

I have sometimes had a little difficulty in keeping Funkia undulata variegata from being affected at the crown with a

kind of rust or canker; when so affected the plant loses constitution and becomes unsightly. I find it good practice to take the plant, divide it, and clear away the affected part. When in full feather this is one of the most effective plants I know of for all purposes. Funkias are admirable plants for exhibition, and ought to be shown in collections by themselves. Funkia Sieboldi when well established will hold its own against all comers, and were it a very expensive plant it would soon be sought after. A selection of these neglected border flowers will by their beautiful appearance repay any amount of labour bestowed upon them. They are easily increased by division when growth has commenced in the spring.—*VERITAS*.

NOTES AND GLEANINGS.

THE new wing of the conservatory at Regent's Park, which is to be opened this day (1st of June), will contain an arrangement of SUCCULENT PLANTS—Agaves, Aloes, Cacti, &c., from the celebrated collection of Mr. J. S. Peacock, Sudbury House, Hammersmith. These plants are to remain as a permanent exhibition. Many of Mr. Peacock's unique plants are strangely quaint, novel, and beautiful.

It will be seen on reference to our advertising columns that Mr. Wills is commencing the DISTRIBUTION OF DRACENAS, which have, with the exception of *D. recurva* and *D. Nitzschnerii*, been fully described in our columns. These two varieties belong to the broad arch-leaved red series and are noble plants.

PUBLIC PARKS.—A new public park has been provided at Botherham. The land has been leased from the Earl of Effingham for forty years, at an annual rental of £50 per annum. The park is formed out of the Boston Castle grounds, and is known as Boston Castle Park. In extent it is about twenty acres, and is 800 feet above the town and 400 feet above the level of the sea. It is contiguous to an established wood, has many points of interest, and cannot fail to be a popular and beneficial resort for the inhabitants of the town and district. Three new public parks are also being formed in the borough of Salford. The largest is situate at Higher Broughton, and is to be opened at Whitsuntide. The arrangements of the terraces and flower beds have been executed under the direction of Mr. Henry Moore, the able gardener at Peel Park.

MR. CANNABY, gardener at Honington Hall near Spilsby, has just cut a head of COOLING'S MATCHLESS BROCCOLI 2½ feet in circumference, and weighing 6½ lbs.

THE FLORAL DECORATIONS OF THE GUILDHALL on the occasion of the visit of H.R.H. the Prince of Wales were supplied by Mr. B. S. WILLIAMS of the Victoria Nurseries, Upper Holloway. There were more than thirty large vanloads of plants used, including Orchids, specimen Asaleas, and all other flowering plants of the season, intermixed with tree Ferns and Palms. The bouquet for H.R.H. the Princess of Wales came from the same firm, and consisted chiefly of *Phalænopsis grandiflora*, *Odontoglossum Alexandræ*, and *Vandas*. For the dinner table 200 bouquets for ladies and 850 coat flowers for gentlemen were supplied by the same firm. The ball-room and its approaches were decorated by Mr. Wills.

MR. NEWELL, gardener at Byston Hall, received a certificate of merit for *HABROTHAMNUS NEWELLII*, from the Royal Botanic Society, Regent's Park, last Wednesday.

SOME of the large MORELS found at this season of the year do not belong to the common Morel (*Morehella esculenta*), but to another species (also edible)—viz., the Giant Morel (*M. crassipes*). Specimens of the latter have been exhibited at South Kensington a foot or more high; they are more tender, and differ in several respects from the common Morel, and they have been found in many localities (including Kew Gardens), since the species was first described as British by Mr. W. G. Smith.

NEVER were Mr. Watson's CALCEOLARIAS at REDLIES finer than during the present season. Some of them have been successfully exhibited at Regent's Park and the Westminster Aquarium, but the dozen plants staged at each of these places could afford no adequate idea of the richness of the collection from which they were taken. The house now devoted to these plants at Isleworth presents a gorgeous sight. It is difficult which to admire most, the merit of the varieties or the cultural skill by which the plants have been perfected. The heads of flowers are of the most massive character, the

individual blooms being remarkable for their size, smoothness, and substance. The colours are extremely varied; the selfs, primrose, canary yellow, with clarets, and maroons in various shades, and even magenta, being as effective as in the indescribable spotted varieties, and the foliage is as fine as the flowers, the bright green luxuriant leaves half hiding the pots. Mr. James has been engaged in improving the *Calceolaria* for twenty-two years. When he first took the plants in hand their average height was 3 feet, and much time was involved in training them round stakes for exhibition, but now they are little more than a foot in height with proportionally stout stems. It is noteworthy that the greater the perfection to which the flowers are brought the less is their disposition to perfect seeds; more seed was once obtained from a dozen plants than is now matured by a hundred. Mr. James's system of culture is founded on the principle of permitting no checks by any cause from the moment the seed is sown to the perfecting of the plant. An insect must not be seen, nor an hour's check be given by a dry soil or atmosphere. The seed of these grand plants was sown at the end of July.

THE new *Pyrethrum aureum laciniatum* which is being distributed by Messrs. Osborn & Sons promises to be a desirable acquisition as a spring and summer bedding plant. It is a distinct form of the popular Golden Feather. It is quite hardy, dwarf, and its delicately cut foliage has a very chaste appearance. This plant has received the highest honours—first-class certificates—wherever it has been exhibited. As a marginal plant and for panels in carpet bedding it is likely to become popular.

THE Brighton Corporation, we are informed, are to be their own nurserymen in order to supply the town with trees, shrubs, and flowers. This is like carrying out on a large scale the plan so frequently condemned of grocers and chemists selling bulbs and seeds. If the plan of this enterprising corporation succeeds they will probably on "public grounds" proceed to the work of establishing a brewery for the benefit of the town and neighbourhood.

THE HERNFORD MEETING of the Bath and West of England Society and Southern Counties Association, commencing June 5th and extending over the four following days, promises to equal the most successful of its predecessors. The show-yard, thirty acres in extent, occupies the site of the well-known race-course; and for the convenience of exhibitors a railway siding has been provided, as on the occasion of the Society's former visit, now eleven years ago. The entries in all departments are unusually large and important. The poultry show will be one of the largest ever held by the Society, there being altogether 475 pens, of which 103 are pigeons. The horticultural tent will, as usual, contain a rich display of plants and flowers; and in the arts department will be found some objects of special beauty and interest, including a fine display of Honiton lace. The open judging of stock will commence on Monday morning at ten o'clock; on Tuesday the annual meeting will be held under the presidency of the Right Hon. the Earl of Ducie, and in the evening a banquet will be given by the Right Worshipful the Mayor at the Green Dragon Hotel.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

PLUM and Pear trees showed blossom plentifully; and though we had frosts and cold winds when the blossom opened, the fruit seemed to have set, but in many cases the effect of the inclement weather is only now visible by the fruit dropping off. Apricots appear to have set better than the Plums and Pears, but much depends upon the position of the trees, and whether the frosts caught the blossoms at the most critical period.

We have looked over some of the wall trees and removed *superfluous growths*. There is no need to allow a quantity of growths to be formed, and when the shoots have considerably injured each other to remove them. If fruit of first-class quality is to be obtained from wall trees the young wood must be carefully attended to from the first; every young shoot must be freely exposed to the sun, but this cannot be possible if three or four are allowed (where there ought only to be one). It is much the best way to remove all wood that is not required early in the season. The same advice holds good with regard to *superfluous fruit*. The practice is, we would fain hope, not generally followed by gardeners, but we have seen Peaches left upon the trees until the stoning period was completed before the last of them were thinned out. Although the fruit may

seem stationary for about six weeks at the stoning period it is not really so, for at that time the stone is being formed inside, and there is probably quite as great a strain upon the resources of the trees as when the fruit is rapidly swelling before the ripening period.

There is usually a press of work at this season, but that must not prevent attention being given to all the fruit trees that were planted last autumn, winter, and during the early months of spring. The later-planted trees may require watering and syringing overhead. Standard trees with large heads, if they have not been securely fastened, are apt to sway with the wind and to become loosened at the surface of the ground. If this is so, see that they are made secure, and let the earth be rammed in close to the stem with a blunt thickish stick. If a mulching of decayed manure was not applied at the time the trees were planted it ought to be applied now. Wall trees that were planted at the same time will also require attention. If they were headed-back as recommended they will now be growing freely, and the shoots should be nailed-in to the wall. A very little neglect at this time may spoil the appearance of the trees for all time. We have now had some refreshing showers, which will save us a great deal of watering. The ground was very dry, and the Strawberry beds were in flower, so that they must have been watered if the drought had continued a few days longer. We shall place a mulching of decayed manure between the rows to retain the moisture.

Vines on the walls require very similar treatment to those under glass as to pinching the laterals and training the leading growths. Provision ought also to be made for cutting out the old wood, by training up the strongest young growths from the base of the Vine, and, as has been already advised, these growths must not be too much covered by the lateral growths of the old wood. Both Vines and wall trees may be well watered with the garden engine, and this is necessary even if it has rained. During March, April, and part of May the trees may have been protected by a projecting coping and canvas screen, which keeps the rainfall from the roots; and should the first rainfall after drought be accompanied by a wind, say from the east, the trees on a wall facing west may receive very little on the roots and less on the leaves. This may, indeed ought to be, made up by well operating with the syringe or garden engine.

VINEYARDS.

The late houses still demand constant attention. Tying-down and stopping the young lateral growths is being proceeded with. It is usual to stop the growths two leaves beyond the bunch, and all secondary growths at the first leaf; but a hard-and-fast rule of this kind cannot possibly be laid down, as the growths differ so much in character. Take, for instance, the Waltham Cross, a new late white Grape: the distance between the bunch and first leaf is from 9 inches to a foot, and all the secondary growths are proportionately long. The Tynningham Muscat is noticeable by its very short-jointed growth, the distance between the bunch and first leaf being only 3 or 4 inches. When a case of this kind occurs we let the short-jointed growths run out to three or four leaves and stop the others at the first leaf. The principal object to aim at is to distribute the growths regularly over the trellis; let there be no crowding in one part and a thin growth in another. We seem to have a good set in both the late houses so far. Royal Vineyard is just coming into flower with us, displaying very freely a characteristic feature of this sort—namely, a small glutinous globule on the stigma of each flower as soon as it opens; these must be removed by drawing the hand gently down the bunch to disperse the globules, otherwise the berries will not set well. When Grapes are ready for thinning we try and have them thinned as soon as possible. It is very difficult to give directions for thinning-out the berries, as so much depends upon how the fruit is set and also the variety that is to be thinned. Sorts like the Black Hamburgh, of which it may be said that almost every berry sets, are easily managed. It is quite easy to leave them regularly over the bunch, and there should be no second thinning; all the berries that are intended to be removed should be removed at once. So with all the varieties; but those sorts which do not set well, of which Muscat of Alexandria is the type, require more judgment in the operation. However well they may have set for that sort there will always be some berries that will be stoneless and which will not swell to the usual size; these ought to be removed first, and after a little experience it is easy enough to recognise them. Mrs. Pince's Black Muscat is one that sets very well—indeed so thickly that it is difficult to remove the superfluous berries without injuring those that are to remain. The bunch must be held steady with a small stick having a fork at one end, this is thrust into the bunch and held against the centre stem. The operator guides the bunch with one hand, and thins out the berries very carefully with the other. The berries that are to remain should not come into contact with anything.

MUSHROOM HOUSES.

Mushrooms may now be obtained in quantity and of excellent quality from unheated houses. At this season, also, woodlice are very troublesome on beds in a bearing state, especially those

on the ground. Soaking this pest of the Mushroom house with boiling water is effectual if the water can be poured upon them, but this is not always possible. A simple and good way to destroy them is to get a few 4 or 5-inch pots and place a boiled potato in each, covering it over with a little dry moss; the pots to be laid on their sides near the haunts of the woodlice. The traps should be examined every morning and their occupants destroyed. It is better to make up the beds on the ground now, as even if the house should be in the coolest place in the garden it will not be too cool for Mushrooms at midsummer. Of course the raised beds may also be made up, but if any preference should be made it is as well to know which is the best. There is not much danger at this season of the material of which the beds are composed being too wet; at the same time it is not impossible to have it so, and it is quite certain that it is much better to err on the side of dryness. It would, of course, be a great mistake to make up a bed in a very dry state, and it is not good management to water much before the Mushrooms appear. We have on previous occasions struck a note of warning against making up the beds with material not sufficiently prepared. It does not follow that a bed overheated before the spawn is inserted will be a failure, but its success is problematical. We have found the spawn run well when a good proportion of cow manure was added to the stable litter.

PLANT STOVE AND ORCHID HOUSES.

Previously instructions were given as to the attention required for winter-flowering plants both for cut flowers and for decorative purposes. *Thysanotus rutilans* is so distinct, and its pendulous red flowers are so striking in a collection, that almost every well-ordered stove ought to contain a plant or two. The cuttings struck in February or March make fine flowering plants in the course of the season. We usually flower them in 8 and 9-inch pots. *Euphorbia jacquiesfiora* with its elegant wreaths of orange-red flowers is invaluable at midwinter. The plants flower well in what are termed 48-sized pots—ours are from 4 to 4½ inches diameter inside—or three plants may be potted in 6-inch pots. *Poinsettia pulcherrima* has now started freely into growth, and the plants will be shaken out of the pots and repotted, first into pots a size smaller, then those they are now in, to be repotted afterwards into larger pots. Good turfy loam, with a little decayed manure and sand to prevent the loam from binding, is a good material for them. We place them in a house near the glass, where they can have a little heat until the roots touch the sides of the pots, when they will be placed in a sheltered position out of doors.

Many species of Orchids require attention at this time, and those that are beginning to make fresh roots should if necessary be repotted. A number of ours have been done, such as *Dendrobiums* of sorts, many *Odontoglossums*, and also *Cattleyas*. The latter should not be repotted every year; but every alternate season the surface should be dressed with turfy peat and sphagnum. As a general rule the large specimens may be repotted every second and third year. A few of the *Oxyphidiums* have also been repotted. The free-growing sorts are usually placed in fresh pots every year. The best material in which to pot the above is fibrous peat, sphagnum, and clean potsherds in about equal proportions.

A few pots of *Globe Amaranthus* and the double-flowered *Portulaca* may be grown in a frame, the plants to be raised from seeds. *Rhodanthes* are very useful for greenhouse decoration, and are easily raised on a hotbed. We generally plant from six to nine plants in a 6-inch pot; they do well in a cold frame, and right well do they repay the little trouble required to grow them into a flowering state. We have potted all the *Chrysanthemums* that are intended to be grown for quality of flower, and have not used such large pots as in previous years. There is not much advantage gained by using very large pots, as sometimes as many flowers and of quite as good quality have been produced from two plants grown in a 9-inch pot as from the same number grown in one 12 inches in diameter. The soil used for potting is rich—good loam four parts to one part of decayed manure, and some crushed bones added to it. Firm potting is necessary. We do not ram the soil in till it is as hard as a board, but it is firm enough to remain in the pot should it be thrown over on its side. The plants intended for specimens have not yet had their final shift, but they will be moved very soon.

FLOWER GARDEN.

The last of our bedding plants were put out on Friday. We had most of them out before any rain came, and the drying east wind was rather trying for a day or two; but the change to the west and gentle refreshing showers have been of great assistance to them. We plant a few of the more tender annuals out of doors, but the greater proportion are grown in pots for greenhouse decoration.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

MANCHESTER (Grand National). June 2nd to 9th. Mr. Bruce Findlay, Royal Botanic Garden, Sec.
SOUTHAMPTON. June 5th, and August the 5th and 7th. Mr. C. S. Fridge, 89, York Street, Sec.
SOUTH KENSINGTON (LITTON?). June 18th. Mr. G. E. Cox, Wilmoat Road, Leyton, Sec.
SWAFFHAM. June 14th and 15th. Mr. T. G. Smith, Hon. Sec.
IPSWICH.—June 15th, July 6th, and September 17th. Sec., Mr. W. B. Jeffries, Bentley Road, Ipswich.
EDINBURGH (Scottish Fanny Society's Show). June 16th. Mr. N. M. Welsh, 1, Waterloo Place, Edinburgh, Sec.
OBTATL PALACE (Roses). June 16th and 17th.
COVENTRY. June 19th. Mr. T. Wilson, 3, Portland Terrace, Sec.
MAIDSTONE (Roses). June 21st. Mr. Hubert Basted, Rockslow, Maidstone, Sec.
FARNHAM AND SOUTH HAMPSHIRE. June 21st. Mr. H. Smith, Sec.
SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.
EXETER (Roses). June 23rd. Mr. T. W. Gray, Hon. Sec.
BRIGGATE (Roses). June 24th. Mr. J. Payne, Treasurer.
BURTON-UPON-TRENT. June 25th. Mr. F. S. Danwell, Sec.
COLCHESTER. June 25th and 26th. Mr. W. Harrison, Sec.
LARGE. June 25th, 26th, and 30th. Mr. James Birkbeck, Delph Lane, Woodhouse, Leeds, Sec.
RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.
WEST OF ENGLAND (HARFORD). Roses. June 29th. Rev. G. H. Palmer, Crendon Hill, Sec.
FROME (Roses). June 29th. Mr. A. B. Baily, Hon. Sec.
WIMBORNE (Roses). June 29th. Mr. C. Parker, Hon. Sec.
TORBAY. June 29th and 30th. Mr. W. Fane Tucker, Capt., Brixton Tor, Hon. Sec.
OXFORD (Roses). June 30th. Mr. C. B. Ridley, 115, Aldgate, Hon. Sec.
BROOKHAM (Roses). July 1st. Rev. A. Charles and Mr. C. Mortimer, Secs.
MAREDON. July 1st. Mr. J. H. Edmondson, Hon. Sec.
SOUTHPORT. July 5th. Mr. A. Campbell, Sec.
ROYAL CALEDONIAN HORTICULTURAL SOCIETY. July 5th and September 18th.
Oundle. July 5th. Mr. Alfred King, Sec.
WESTMINSTER AQUARIUM. July 5th and 6th.
NEWARK (Roses). July 6th. Mr. F. B. Dobson, Sec.
ALEXANDRA PALACE. Roses, July 7th and 8th.
WELLINGBOROUGH. July 7th and 8th. Mr. W. B. Parke, Hon. Sec.
KALING, ACROSS, and HARWELL. July 11th (at Keston). Mr. R. Dean, Sec.
ENFIELD. July 12th. Mr. J. T. Rafe, Bloomfield Nursery, Sec.
HILDESBURG (Roses). July 12th and 13th. Mr. J. Mitchell, Sec.
LEAM (Roses). July 13th. Mr. E. Cartwright, Sheep Market, Leam, Staffordshire, Hon. Sec.
WIMBORNE. July 13th and 14th. Mr. P. Appleby, 5, Linden Cottages, Hon. Sec.
KILMARNOCK. Roses, July 13th and 14th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.
TOWNSEND. July 13th. Mr. W. Blair, Hon. Sec.
TREWENBY. July 25th. Mr. P. Moore and Mr. H. J. Cochrane, Hon. Secs.
WARRAN. July 26th. Mr. J. B. Shirley, Hon. Sec.
HADDINGTON. July 26th and 27th. Mr. T. Atkinson, 'Barleywood, Haddington, Sec.
ABERDEEN (Royal Horticultural Society). July 26th, 27th, and 28th. Mr. Archibald J. Rennie, 128, Union Street.
BRIGGATE. July 28th. Messrs. C. Jessop & E. Bawnley, Hon. Secs.
KILBY (Flowers). August 1st. Mr. C. E. Bracebridge, Sec.
HEWORTH (Horticultural). August 2nd. Mr. E. H. Felson, Hon. Sec.
BAWTHORPE (ROSEDALE). August 4th and 5th. Mr. M. J. Lonsdale, Sec.
TAUNTON DEAN. August 10th. Mr. F. H. Woodford, M.D., and Mr. Clement Smith, Hon. Secs.
FELBY. August 11th. Mr. Walter Fisher, Hon. Sec.
OTLEY. August 13th. Mr. Alfred Suttle, Hon. Sec.
CLAY CROSS. August 15th. Mr. J. Stallard, Clay Cross, near Chesterfield, Sec.
WESTON-SUPER-MARE. August 15th and 16th. Mr. W. B. Hampton, Sec.
PETERBORO. August 16th and 17th. Mr. W. Troughton, Hon. Sec.
SHERWENBY. August 16th and 17th. Admitt & Neanton, Hon. Secs.
MILFELD HORTICULTURAL. August 19th. Mr. George Senior and Mr. John Rushforth, Hon. Secs.
NEWBURY. August 23rd. Mr. A. Stedding, Northbrook Street, Hon. Sec.
CHERTSEY. August 23rd. Mr. E. Thorne, Hon. Sec.
BARGATE (ISLE OF THANET). August 23rd. Mr. R. B. Scharian, Broadstairs, Sec.
SEATON BURN. August 26th. Mr. E. Richardson and Mr. W. Elliott, Secs.
MORTONSH. September 1st and 2nd. Mr. Alex. Burnett, 3, High Street, Sec.
DURHAM (International). September 7th, 8th, and 9th. Mr. W. B. McKelvie, 28, Euclid Crescent, Sec.
GLASGOW. September 12th and 13th. Mr. F. Glib. Doughall, 167, Canning Street, Sec.

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (G. F. C.).—If you send fifteen postage stamps with your address and order "The Greenhouse, its Plants and Management," and "Flower Gardening for the Many," you will have them sent from our office post free.

VINE LEAF (G. S.).—We can detect no ailment in the leaf. It seems very healthy.

PEACH LEAVES DISEASED (W. A.).—Probably the east winds and cold nights have caused the discolouring and decay, but if the trees are under

glass the roots are torpid and should be watered freely with weak tepid manure water.

PRIZE CARDS (A. P. B.).—We know of no place where you can purchase them. We know some very pretty cards were painted by ladies for a small show.

PTERIDIFLOR (Bramley).—Why in Savoy this name should be given we can only surmise because its shape is somewhat like that of a net for catching eels—pentene. It is the *Paulownia imperialis*, and has flowered in the open air in Devonshire.

VEGETABLE IVORY (Devon).—The following is from a reply to a similar inquiry sent to the *English Mechanic*:—"Phytelephas macrocarpa is one of the most beautiful of the Palm tribe. It grows on the Andean plains of Peru and on the banks of the river Magdalena, and other parts of South America. Its stem is short and procumbent, but has, proceeding from its crown, a magnificent tuft of light green pinnated leaves of extraordinary size and beauty (like immense ostrich feathers), rising from 30 to 40 feet in height. The flowers are on a crowded spadix, and have neither calyx nor corolla. The fruit is as large as a man's head, and consists of many four-celled leathery drupes aggregated together, and contains numerous nuts of a somewhat triangular form, nearly as large as a hen's egg; they are called Corozo nuts in commerce. The kernels, when ripe, are very hard and white, and resemble real ivory. They are extensively used in the manufacture of buttons, umbrella handles, and other small articles. Several millions of these nuts are annually imported into this country, and a large proportion of these imports are consumed in the manufactories of Birmingham."

PRIMROSE ABORTIVE (J. E.).—The calyx being in the form of the corolla though still green, and all the other parts of the flower being absent except an abortive pistil, is very unusual.

COTTAGE'S CLASS (H.).—Not knowing the season of the year when the show is to be held, we cannot name suitable plants.

WHITE CLIMBING ROSE (E. O.).—Climbing Rose *Devoniensis* is white-flowered; *Lonicera tatarica* pulchra is crimson-flowered. Virginian Stock is an annual, but so produces itself by self-sowing that it is perennial in producing flowers.

PELAGONOTUM LEAVES SPOTTED (W. D. A. and J. S.).—Deficient ventilation and irregular watering—sometimes the roots being too dry and then excessively wet, will cause the leaves to be mildewed and spotted like those you enclosed.

OLD BROXTON STOCK (J. B.).—Any of the principal London or provincial seedsmen can supply this.

SEEDS FROM INDIA (St. Vincent).—We do not think your seeds are seeds of *Dolichos*, but we will sow them in the above and let you know. You may raise Indian seeds in a cucumber frame, and the plants will grow until the autumn, when they would require a stove temperature for the winter months.

ROSES NOT BLOOMING (Tager).—The buds do not open because they have not sufficient heat combined with light and air. They should be placed close to the glass. We do not like to risk naming roses from unopened buds or badly-formed flowers.

MANAGEMENT OF VINES (Idem).—You should stop the leading shoots as soon as they reach the top of the rafters, and stop the laterals at every leaf. We allude only to the lateral growths that will be formed at the end of the leading growth.

ERTHERIA CULTURE (R. E. C.).—You do not advise us as to the size of the plants, but we presume they are in small pots, and the plants comparatively moderate in growth. We should shift them into pots a size larger, or so as to admit of an inch of fresh soil being placed all round the ball, the pots they are shifted from being filled with roots; if not, the potting should be deferred until they are. A position in a cold pit and near the glass so as to keep the plants sturdy in growth is most suitable, syringing frequently so as to keep down red spider, watering moderately until the roots are working freely in the fresh soil, and afterwards copiously. A rich light loam and sandy peat in equal parts, with a half part of leaf soil and a free admixture of silver sand, will grow them well. They will speedily fill the pots with roots, when they may be transferred to pots 2 to 4 inches larger in diameter, and they may be kept in the pit, regulating the shoots by tying, or have a light airy position in the greenhouse. The plants may be planted out after the middle of June in rich light soil in an open but warm sheltered situation.

GLOXINIA CULTURE (T. M. B.).—These free-flowering plants require a compost of two parts turfy loam, one part each of leaf soil or well-decayed manure, sandy peat, and silver sand. They do best in a low house or pit at a distance of about 18 inches from the glass and with slight shade, the main point being to maintain a moist atmosphere with moderate ventilation. We pot ours before the corolla starts into growth, into pots about twice in diameter that of the roots, and when they have made shoots about 2 inches long we shift into the blooming pots which usually are 4 inches larger in diameter, and add at this potting a little old cow dung, draining the pots well. Moderate watering is given at first, increasing it as the plants advance in growth, they requiring when advancing for flowering free watering, but at the same time avoiding making the soil sodden. The plants may be sprinkled overhead morning and afternoon until flowering, and the house kept moist by frequent sprinklings. If kept too dry the leaves become a prey to thrips. A temperature of 60° to 65° at night, 70° to 75° by day, with a rise from sun heat to 85° or 90°, is most suitable.

PRUNING OLD LAURELS (A Constant Reader).—It is not now too late to prune Laurels. We should cut-in the shrubs to the form desired, and you will be rewarded for the trouble by a dwarfier growth, which, however, to be kept neat must have the irregularities shortened in August, reserving any close cutting-in until spring.

STOPPING TOMATOES (Idem).—Plant them out at once against the sunny wall, and keep them well supplied with water, especially in dry weather. Take out their points when a foot in height, and train the shoots at about a foot distance apart, and when they show fruit or rather flower buds stop the shoots one joint beyond, laying-in what shoots you can without overcrowding, thinning-out as required shoots of the latter kind, and stopping throughout at one joint beyond the fruit, cutting clean out forever shoots on the front of the branches, the large old leaves being removed to prevent the young from being too much crowded.

REPORTING ROSES (F. O. M.).—We prefer that the repotting of the plants be done as soon as convenient after blooming; and in the autumn, or previously to starting the plants into fresh growth, remove a portion of the surface soil and replace with a fresh rich compost.

CLIMBERS FOR WEST BALCONY (Rev. S. A. B.).—*Lonicera flexuosa*, *Clematis montana*, and *Rose Felicité perpetué* might succeed.

LIQUID MANURE FOR CUCUMBERS (Idem).—The best probably is a peck of sheep droppings to thirty gallons of water, but these are not always procurable. A peck of soot to the same quantity of water is also good, but a stimulant generally applicable is made by dissolving 1 lb. of guano in twenty gallons of water.

GROWING PLANTS FOR EXHIBITION (An Amateur).—Of the two descriptions of Fuchsia the "little pyramids 2 feet 6 inches in height" will be more suitable than the "spring-struck cuttings now about 9 inches high," though the latter grown-on with liberal treatment will be nice plants, but will not compare with the former in compactness of growth. Keep them well stopped until about seven, or better eight, weeks before you wish them to bloom, applying liquid manure at every alternate watering. They would be best grown in the cool conservatory. The liquid manure ought not to be given until the pots are filled with roots. The Geraniums would be best grown in the cold frames, stopping them up to eight weeks before blooming, and employing liquid manure so as to have them in good foliage, not permitting any of them to flower until after the last stopping. The Balsams will also require to be grown in pits or deep frames, though you may remove them to the conservatory after they are advanced for flowering. They require to be kept near the glass, shifted into larger pots as they advance, and to have the flowers removed up to within a fortnight of exhibiting, the centre stem flowering before the side branches, so that the flower buds must be removed from it as well as from the side branches if need be, so as to have all in bloom together. The buds take when the size of peas a little over a fortnight to expand, so that you may know when to leave off picking the buds. The buds should be removed when the size of peas. We could not from the list of the kinds you name state which would be the best to exhibit, as we might name such as would not be in condition, as they will vary somewhat in size, also in foliage and flower, as well as symmetry of plant. Grow all well, and call in before the show one with a good knowledge of plants for exhibition, and with such aid you will be able to make a better selection than we could without seeing the plants.

SCALE ON PEACH TREES, &c. (Nadrag).—It is the *Aspidiotus* roae or *Rose scale*, closely allied to the *Coccus*. It is destroyed by the same application we have directed for that.

WOODLICK (J. Collett).—Can any of our readers inform us of an effective mode of protecting Melons and other plants from the attacks of these pests? We presume our inquirer has tried the old and good plan of a boiled potato wrapped in a little hay and placed in a flower pot laid on its side in their haunts, examining it in the morning, and shaking the woodlice, which will be scoured in the hay around the potato, into a bucket of boiling water. A number of these baits will thin the woodlice considerably, and so would a few treads placed upon the bed. A wholesale means of destroying these pests other than by boiling water, which cannot always be used without injury to the roots of the plants, is much needed.

MULBERRIES SEEDLESS (J. F.).—Your former letter did not reach us. You are in error in supposing the Walnut and Filbert to be dioecious. They are both monoecious trees. The Mulberry is also monoecious, but sometimes dioecious, and occasionally polygamous. The flowers you have sent are all female flowers. We have seen trees producing only male, and other trees producing only female flowers, while we have also seen female and male flowers (short close catkins), on the same tree. A Mulberry tree raised from seed will often produce only male catkins for a few years, the tree eventually becoming fruitful. It is not advisable to propagate from a tree of this nature, and cuttings should only be selected from fruitful branches. Your fruit is seedless because of the absence of male catkins, but it will produce fruit as freely, and that fruit will be as good, perhaps better, for dessert and preserving purposes as if it contained seeds. An exact analogy to this is found in the animal kingdom, where a hen under certain conditions will produce eggs which are perfect for cooking purposes, but which for obvious reasons are unproductive of chickens. In your case the Mulberry is dioecious, and as it is planted at the back wall of a vineyard for the sole purpose of producing fruit, the absence of male catkins is rather an advantage than otherwise.

NAMES OF PLANTS (T. E.).—The yellow, *Doronicum pardalinense*, *Leopard's Bane*; the white, *Cardamine pratensis*, *Lady's Smock*. (*J. P. Allen*).—1, *Diplosis glutinosa*; 2, *Adiantum ethiopicum*; 3, *Adiantum Capillus-Veneris*; 4, *Vitis sp.*; 5, *Impatiens*. (*A. B.*)—1, *Kennedy's coedrae*; 2, *Lopelia racemosa*; 3, *Centradenia rosea*; 4, *Dedalicanthus nervosus*. (*A. Ross*).—1, *Pteris arguta*; 2, *Asplenium bulbiferum*; 3, *Aspidium falcatum*; 4, *Pteris serrulata*; 5, *Dedalicanthus nervosus*. (*Mrs. Oliver*).—*Sedum Sieboldi* variegatum.

POULTRY, BEE, AND PIGEON CHRONICLE.

OPEN JUDGING.

A NEW system of judging was put into operation the other day at Maidstone at the Southern Counties Dog Show. Catalogues were placed in the judges' hands, thus affording them full knowledge as to the owners of and the names of the exhibits. The success seems to have been great, and from many quarters we learn that there has not been such a satisfactory number of awards for some time past. So well was this new system received, and so well did it seem to work, that the question naturally arises whether it would not be as well to see if the same plan will be as successful in awarding poultry prizes. We fear that many of our exhibitors have lost some faith in the fancy during the past season, and we hear of one or two seriously threatening to give up exhibiting, and those, too, fanciers whom we can but ill spare. Now, open judging should at any rate make them less suspicious, and feel inclined to try another year. We do not believe one-fourth of the stories we hear about awards being improperly made by some judges; but we do feel that if those gentlemen went into the show catalogue in hand to make the awards, they would come out again in a much more pleasant frame of mind than often is the case, for, however

upright a judge may be, we fear there is always someone at nearly every exhibition who thinks he has been out of a prize by another being favoured, which must be very annoying to the judge who has honestly tried to do his duty. Now, we believe many such grievances would be swept away, while on the other hand others might arise; still we should very much like the system to be tried and fairly tested, and the larger the show that would make the start the more probability is there for real and permanent good to arise.

We should like to know some of the judges' opinions about this system. We cannot but think that they would co-operate in giving the plan an honest trial. We are of opinion that they would be benefited as much as the exhibitors, for not only might it lessen some of their difficulties in judging by knowing the owners of the birds, but it would anyhow remove all that absurd ignorance which some profess to hold about the ownership or the identity of well-known specimens. Again, it would put judge and exhibitor on a more equal footing, and enable them both to talk over an award more pleasantly than is now often the case, for it is remarkable how some judges would almost seem to shirk meeting exhibitors face to face after the show is opened to the public, as they trundle home as soon as the awards are made, and are seen no more that day. We confess we think very much more highly of those judges who remain when the exhibitors come in, and talk over their awards with them, and confess themselves wrong when they are wrong, for from mistakes at times no one on earth is free. Honest and upright exhibitors the system could not hurt, but would surely give them a greater confidence in the judge and the exhibition management itself; while those who go in for little dodges and tips, those need not exhibit at openly-judged shows, and so make their absence conspicuous.

Another gain would surely be in removing all difficulties about committees exhibiting, for open judging would place such gentlemen on the same footing with every other exhibitor, and so hush those whispers, which we believe are most grossly exaggerated, of the managers of shows starting the same for their own benefit.

And then above all surely those who wage such fierce and desperate war against point cups would find their remedy in open judging, for a cup could hardly be offered for competition where catalogues were placed in the judge's hands. For, to take Portsmouth for example and the Brama point cup there, if a judge was dishonest enough to do it he could very highly commend or highly commend all an exhibitor's pens until he found by a simple addition sum that the cup was obtained. This could be also done with a Pigeon point cup, although it might entail a better knowledge of the first simple rule of arithmetic. The possibility of such a course of action, however, could well be considered a grievance by a disappointed exhibitor, who in the time of his wrath will say anything, and so we think practically the point-cup system could be thus abolished. Not that we ever could see the evil that it did in the strong way that one or two of our contemporaries do.

Taking, then, this new plan in every light we think that it would be found to work well. Anyhow it is worthy of a proper trial; for although it might not entirely quench all those disagreeable suspicions which some will entertain of a judge and exhibitor working together, still it must lessen them and to a great degree remove them entirely. We cannot think of agreeing with a correspondent who writes to us, "Any judge refusing to countenance open judging proves himself guilty of dishonesty," for many of those who have so honourably for year after year awarded the prizes at our exhibitions may object to the new system and doubt its usefulness; but we do not hesitate to think that if open judging is found to remove some difficulties from their own paths and from those of their friends that they will soon be won over, and anyhow will wish to see the system given a fair trial. It has proved so far a success with dogs, and has been approved of by their owners; and dog and poultry exhibitions being so much alike in management we can only think that the plan should work well with poultry shows. As we said, there may be difficulties and troubles connected with this new system, for it is not to be supposed that every evil can be remedied at once; but if it only to some extent checks suspicions, which frequently have no proper origin, both exhibitor and judge should feel for the present at all events more satisfied. We shall cordially congratulate any poultry committee who gives it the first push, and promise that if we find, as we anticipate we shall, any advantage gained and any evils crushed, that we will for our parts, with that other friendly contemporary who first put the movement in motion, go on pushing it till we land the open-catalogue system in the haven of success.—W.

VENTILATING POULTRY HOUSES.

PURE air at all times must be admitted into the poultry houses where chickens or adult fowls are confined, by day or at night. This is indispensable to their health, their com-

fort, and their thrift; precisely as this same precaution is essential to the bodily welfare of human beings in their dwellings, and especially in their sleeping apartments.

Closely confined buildings where the poultry roost is a most pernicious practice at any season, and particularly where such premises are overcrowded. Small holes or slits near the eaves may be so easily made through which the ascending vicious and obnoxious air can escape, that this arrangement ought never to be omitted in the absence of some more elaborate mode of certain ventilation.

The roosts should be entirely below the ranges of such openings of course, to avoid the draughts of cold air which may be forced inward in severe weather. But these apertures may be secured in winter inside or outside effectually, and still afford ample outlet for the rising offensive effluvia that emanates from the bodies of even the healthiest birds in confinement.

This question of thorough ventilation in the fowl-house or pigeon-loft, is a matter of great import; and its constant appropriate observance tends vastly to keep our feathered pets free from many of the ailments caused (when we least comprehend it), by compelling them to inhale over and over again the foul air generated in completely closed, unaired apartments.—(*American Fancier's Journal*.)

POULTRY AND BIRD NEWS AND QUERIES.

"CLARISSA" wishes to know the best method of killing her poultry. There are three modes of killing. Some advocate suffocation, clever men among them. Others cut the throats. A third party breaks the neck. It is said suffocation is the best, as the bird loses no part of its properties; but when death is caused by this process there is a dark colour which is unpleasant and suggestive. When the throats are cut the flesh is beautifully white, but the meat is dry and suggestive of deal sawdust. When the neck is broken, the dislocation being perfect, if the fowl is held by the legs, the head being downwards, all the blood runs to the disjunction of the vertebrae, none remains in the body, and the juiciness of the flesh is retained.

Do—xx—xx.—There is a controversy as to which songster among the birds begins his carol earliest. Since I read it in one of your contemporaries I have listened every morning. This morning (Monday) I heard the Robin at 2.50 a.m., the Thrush almost at the same moment. On two occasions I have heard the Blackbird at 2.30 a.m.

We may remind those intending to exhibit at the coming summer York Cage-Bird Show that the entries are announced to close on Saturday, June 3rd. The Bird Show, which is always a great feature in connection with the Grand Yorkshire Gala, will take place on the 14th, 15th, and 16th of June.

The declared value of eggs imported in the four months ended the 30th ult. was £929,509; last year, £997,383.

GOOSE EGGS.—I have a Toulouse Goose that has laid fifty-four eggs this season, and on the 22nd of this month commenced to sit upon eleven. Some others I put under hens and have hatched a fair average. Is not this a large and unusual number of eggs for a Goose to lay?—SWANSEA.

A lad at Langley took from a nest here a few days ago five young full-fledged Starlings, three of which were their natural colour, and the other two were a pure white with yellow beaks. Although we have had white Sparrows here before I never before saw a white Starling.—H. LONG.

Dr. Rogers of East Grinstead has a cat and a parrot which have formed a great attachment for each other. For a length of time the cat would not sleep comfortably anywhere except in the cage with the parrot. Eventually Pussy had prior claims on her affection—kittens. One of these she nurses in a cross-handled garden basket, and no place has such an attraction for Polly as the handle of that basket. There she sits for hours demonstrating in ways unspeakable her affection for the cat and especially for the kitten, even making attempts to feed it. Polly has also installed herself guardian of her feline friends, and which she will not permit a stranger to touch. He may scratch Polly unmolestedly, but no amount of coaxing will gain him the privilege to stroke Pussy. All attempts in this direction the bird resents vigorously. It is a pretty sight to see the bird mounting guard over the cat and kitten, and worthy of the pencil of Mr. Harrison Weir.—A VIATOR.

TIVERTON POULTRY SHOW.

THE Devon County Agricultural Meeting was this year held at Tiverton, and a very pleasant little gathering it was. Mr. Fielding of Trentham judged the poultry, and in many classes gave much satisfaction. The Baroness Burdett Coutts's £10-note, to be awarded in the class for undubbed cockerels, brought out a dozen and a half of entries; but beyond the winner, which was a smart Brown Red, we did not think the quality very startling.

In the next *Gams* class the first and second Black Red cocks ran each other close for first honour, the winner having perhaps a little more style. Class 4 was supposed to be for Indian Game, but we conclude it is pretty well known that Malays in Devonshire and Cornwall answer all the requirements of the judges in these classes; anyhow, nine pens appeared, and if the class had been called Malay there would very likely have been eighteen. A fair pair of young birds won, but not quite large enough. *Dorkings* had only six entries, but a very good pen was first; the hen nice in colour, and very good in shape. We liked the second-prize pen very much also, the cock being of good colour, and altogether a showy bird. *Cochins*, Buff or White, competed together, while Partridge had a class to themselves. This is a most absurd classification, and we cannot think why this Society persists in it. The winning Buffs were very good. We liked the cock very much; his shape is good, and his colour very fairly clear. Capital Whites were second, the cock very showy; but we liked either of the highly commended hens better than the second-prize one. The third pen of Buffs contained a smart young cock of pretty colour. The first-prize Light *Brahma* hen was extremely good in shape and neat in head. In the Darks we liked, as a pair, almost the third-prize pen best, though the second hen was well marked and neatly made. *Houdans* made a small but good lot of seven pens. The first-prize pair were evenly marked and good in points. In the next class only one solitary pen appeared, in which the birds were not superior. The Golden-pencilled and Silver-spangled *Hamburghs* made the best show. We liked the hen in 142 (Thompson) very much, as her pencillings were clear and her colour bright. The Judge seemed more at home here than among some of the other birds, and there was very little indeed for any to find fault with. The markings of the first Silver-spangled hen were decidedly good, and the cock with her had very good sickles. In the Variety class Polands won all three of the prizes, thus showing the lottery of such a receptacle and the great want of better classification, for although the Polands were excellent and the first-prize pen especially so, still there were other pens of less-cultivated breeds which were in their way quite up to the standard of the second and third-prize Polands. The Sale classes were large, and we noticed a good Game cock first among the cocks, and a pair of good Spanish and *Dorkings* first and second among the hens. A pen of *Aylesburys* of massive shape and clear in bill were first in their class; while in *Rouens*, unless they were judged by weight, we liked the *Duck* in the second-prize pen best, the drakes being about equal in merit. *Turkeys* only mustered two pens, where a very good pair of Cambridge won first.

In *Pigeons* the entries were very small, and Mr. Yardley had it pretty much his own way.

POULTRY.—GAME.—Undubbed.—Cock.—1, H. E. Martin. 2, J. Mason. 3, J. C. Huxtable. 4, N. Barter. *Any variety.—Cock.*—1, H. E. Martin. 2, E. G. Farquharson. 3, J. T. Browne. *Black or Brown Red.*—1, J. T. Browne. 2, J. E. Dunstan. 3, Rev. A. Cruwys. *Any other variety.*—1, J. Mason. 2, J. T. Browne. 3, T. J. Lobb. *Indian.*—1, Mrs. J. Partridge. 2 and 3, J. Bone. **DORKINGS.—Coloured.**—1, R. W. Beachey. 2, Rev. H. F. Hamilton. 3, Rev. G. Watson. **COCHINS.—Buff, White, and Cinnamon.**—1, S. R. Harris. 2, J. N. Whitehead. 3, Rev. G. F. Hodson. *Partridge and Brown.*—1, G. Lias. 2 and 3, H. Moore. **BRAHMAS.—Light.**—1, Rev. G. Watson. 2, J. Croote. 3, J. H. Nicholls. *Dark.*—1, Mrs. Radcliffe. 2, J. Long. 3, Rev. H. F. Hamilton. **SPANGLED.**—1, J. Bone. *Any other variety.*—1, J. H. Nicholls. 2, J. Croote. 3, J. H. Nicholls. **ANY OTHER VARIETY.**—1, J. H. Nicholls. 2, J. Croote. 3, J. H. Nicholls. **SELLING CLASS.—Cock.**—1, J. T. Browne (Game). 2, J. H. Nicholls. 3, J. Harwood (Black Minorca). *Hens.*—1, J. Boulton (Spanish). 2, R. W. Beachey (Dorking). 3, W. T. Lovering (Game). **Ducks.—Aylesbury.**—1, E. Snell. 2 and 3, S. R. Harris. *Rouen.*—1, Rev. A. Cruwys. 2, Mrs. J. Partridge. 3, J. T. Browne. **GESE.**—1, W. H. Coppstone. 2, B. J. F. Clifford. 3, E. Snell. **TURKEYS.**—1, Rev. N. J. Ridley. 2, Mrs. Troye. **PIGEONS.—CARBON.**—1, W. D. Richardson. 2, T. Wicks. **POUTERS.**—1, F. Beck. 2, H. Yardley. **BARBS.**—1, H. Yardley. **TUMBLERS.**—1, H. Yardley. 2, F. Beck. **FANTAILS.**—1, J. F. Loversidge. 2, H. Yardley. **OWLS.**—1, F. Beck. 2, H. Yardley. **TURKITS.**—1, G. H. Gregory. 2, H. Yardley. **ANTWERP.**—1, G. Colson. 2, W. D. Richardson. **TRUMPETERS.**—1, H. Yardley. 2, H. Denham. **DRAGONS.**—1, H. Yardley. 2, T. Wicks. **ANY OTHER VARIETY.**—1, H. Yardley. 2, G. O. Lamoureux.

SYSTEMS OF MANAGEMENT.—No. 2.

In our letter on this subject which appeared last week notice was taken of the way in which the cottagers of England hobble along, or rather allow their bees to hobble along, from generation to generation, for very few of the said cottagers have any bright view or intelligent grasp of their own or any other system of managing bees. Brighter views, more intellectual pleasures, and larger returns, let us hope, are in store for them.

In oratory it has been said that action is the first, second, and third best thing. In bee-keeping strong hives are the first, second, and third best things in any system of management. Other good things are young combs, young queens, and stock hives that have never been once filled with honey to repletion. Fat plethoric hives should not be kept for stock for many reasons. A superabundance of honey in stock hives in autumn, winter, and early spring is very hurtful. It is so

cold that bees will not sit on it; they nestle as far from it in winter and cold weather as possible, and may sometimes be found clustering on the outsides of hives even in summer, rather than sit on honeycomb; and in winter they often huddle themselves in heaps on their boards or sides of their hives inside rather than risk their lives near an iceberg of honeycomb. Besides, honey contracts the breeding spaces of hives in two ways. A superabundance of honey in stocks occupies too much comb, and generally with a superabundance of honey there is a superabundance of pollen, which is as injurious in a bee hive as a sluggish liver is in an animal. The best bee-keepers, then, have four points to their charter—namely, strong hives, young queens, fresh combs, and plenty of breeding space.

The Australian system of managing bees comprises both supering and nadiring. When a hive becomes full a super as large as itself is placed on it for store room; and when the combs of the bottom hive become black nadiring is resorted to instead of supering. The honey, of course, is stored in the uppermost hive, and the bottom one kept for stock. This system does not prevent swarming altogether, for bees often swarm with supers half filled on the hives, and even with nadirs under them. This system is easily understood and practised. The nadiring process of securing both honey and stocks is objectionable, for nadirs filled by stocks that do not swarm are often half full of drone comb, and therefore very ineligible for stocks. The idea of youthful queens is not considered at present; by-and-by it will be otherwise amongst our colonial friends.

The introduction of Mr. Nutt's system of bee-management in this country deepened the conviction in the minds of thoughtful observers than an earnest enthusiastic person can, single-handed, influence for good or evil a great number of people. The Nutt hive speedily went into disuse and the waste corner. If the hive had been introduced with less ostentation and as one capable of improvement, the system or hive would perhaps have been improved. Both hive and system were objectionable in my opinion. The openings or doors between the central and collateral boxes were not large enough, nor where they ought to have been. The central boxes were often full before the bees entered the collateral ones, which did not prevent swarming. The position, size, and shape of the partition doors were wrong, and the whole thing was a failure.

The bar frame hive or moveable-comb system, so much in fashion, is now on its trial. It has many advocates and patrons both in this country and America. L. L. Langstroth of America is its greatest advocate and admirer. If he were less biased and prepossessed in its favour his opinions would have greater weight amongst thoughtful men. But I am not now going to enter into controversy with anybody about this or that hive, or this or that system of bee management, neither am I here to undervalue improvements of any kind made in apian science. I wish I were able to give the reader a full-length portrait of the moveable-comb system, with every feature of excellence fairly and honestly shaded. Moveable combs give the students of bee history a good opportunity of examining the internal operations of a bee hive, and are useful for scientific purposes. Bars of honeycomb may occasionally be removed from bar-frame hives, and bars of brood too. The American slinger has been invented to extract honey without crushing or breaking the combs of moveable frames. The bar-frame hive can be managed on the swarming and non-swarming system, and for both nadiring and supering. The hive is generally used for supering on the non-swarming principle, and is chiefly in the apiaries of amateurs and dealers—Great Britain and Ireland only considered. Some of the advocates in the bar-frame school become great experts in manipulating processes—removing and refixing bars of brood, removing and emptying bars of honey and honeycomb. The bar-frame hive does not prevent swarming, and does not admit of being enlarged by eking. This is one great defect in the hive, which will be seen and felt by many bee farmers. The mode of swarming bar-frames artificially, as practised by many adepts in the school, is very far from being perfect. Taking half the bars and bees of a hive ready for swarming and placing them in an empty hive is the usual mode adopted in artificial swarming in this school. Such splitting and halving is unnatural and objectionable. The hive that has the queen will go on very well, but the other having bees and combs only has a queen to rear, and while rearing one or more will become filled with drone combs, for bees instinctively build drone combs when young queens are being hatched. In artificial swarming the bees and queen only should be put into the empty hive, and all the combs remain in the old stock hive. In this way we imitate natural swarming as closely as possible, and it is well to be in the line of natural processes, and when that is not possible let us keep very near to it.

If I were to mention all the objectionable features of the bar-frame hive and system that strike me I fear some of our friends of that school would look on and treat me as an enemy. Now they should not do this, but rather be pleased to have the weak points of the system pointed out, and removed if possible. The system is on its trial, and attempts are constantly being made

to modify and improve the bar-frame hive. We all sympathise with the Scotch woman who said, "I ken other bairns are bonnier than mine, but still I like my ain the best." It is well when intelligent and enlightened bee-keepers like their own the best.—A. PATTISON.

DISCOVERY OF THE HONEY EXTRACTOR.

THIS valuable machine had its origin wholly in an accident, like many another valuable invention. The honey pump was discovered in this wise. It is a pretty story.

In Italy there chanced to dwell one Major Von Hruschka, a German, and one of Nature's bee-keepers. One day Major Von Hruschka was in his apiary, and his son chanced to be there too. The boy carried a tin pail, which had a string tied to it. The major gave the boy a piece of honey, putting it into the tin pail. Then the youth, boy like, began to swing the pail with the honey in it around and around in a circle, holding it by the string. A moment after he had ceased this amusement, the major happened to look again at the piece of honey; what was his surprise to find that the honey was all drained out neatly and perfectly from that side of the comb which had been on the outside of the circle as the boy swung the pail around by the string! The major thoughtfully turned the comb over and bade the boy swing again. This time the other side of the comb was all drained out, and that night Major Von Hruschka went to bed thinking. He thought and thought and experimented till he gave bee-keepers the honey extractor, which whirls the honey out of the comb by centrifugal force, leaving the comb to be filled again by the bees, and the liquid honey, clean, pure, and beautiful, to be eaten by people.—(*Cincinnati Commercial*.)

OUR LETTER BOX.

EXTENSIVE POULTRY-KEEPING (C. R.).—One hundred head per acre are too many. Forty are quite enough, and they should be thinned when chickens are growing-up and hens are ceasing to lay. You cannot keep a hundred fowls for \$15 per year; they will cost above \$80 under favourable circumstances, \$40 unless things are favourably bought. The breed will depend much on the soil and climate. Dorkings on a light soil. If, however, you are looking to eggs only, Houdans, Orpingtons, or Spanish, as they do not sit. If hardy fowls that will "do all work," Brahmas or Cochins. If they are to be kept in perfect health, six hundred fowls should have twelve roosting houses, or four long sheds, lofty, and tiled or slated, with cross-boards, mangers, and racks. Fowls do well in these places. They choose their own roosts, and the sheds are refuges in wet and bad weather. Cheap land will answer best for poultry. A light dry soil, such in the heath districts may generally be had within forty miles of London at about 15s. per acre, or at most \$1. You must not look for an average of more than 120 eggs from each hen where you propose to keep hundreds.

RENDERING EGGS UNFERTILE (Pea Comb).—We are not able to give you the information you ask. Many expedients have been tried. Some pass a fine silver wire from one point to the other and draw it through, others give a thoroughly good shaking. The last is very effectual. We believe your remedy cannot be effectually applied without injury to the article in a commercial point of view.

FOWLS DYING (E. D.).—It is difficult to guess at the cause of death unless it be from fat and rupture caused by strain to lay an egg. This would seem the solution of the mystery, as they always die on the nest. An overfat fowl cannot lay without great effort and pain, and this sometimes causes death. We believe it does in your case. The cure will be to feed less, and as the fowls have a good grass run they will be all the better for it. Give them ground oats morning and evening, and let them dine with "Duke Humphrey." It is the first time we have heard of peritonitis. When a hen is suffering from inability to lay, a feather dipped in oil and passed up the egg-passage will often give instantaneous relief.

LUMP IN BANTAM (E. H. P.).—It is not an unusual case. If it can be felt easily, you may get rid of it by turning the tail and rump upwards, passing a finger in the passage till it is behind the tumour. Pressure then between the finger inside and the thumb outside will often cause it to burst the skin. Where this is not the case it may be opened with a penknife; it will be found to come out easily, and to be a ball of firm cheesy substance. If the fowl is of little value it is hardly worth the trouble, as the disease is not a sign of health.

CANARY BREEDING, AND YOUNG LINNETS IN A CANARY'S NEST (E. E.).—It is not an uncommon occurrence to match two hens to one cock bird. When this is done the hens should have been kept together some time previous to make them familiar with each other, and the cage in which they are placed should be spacious. As it appears you have not had much experience in bird-breeding, try first by matching only one of the hens with the cock. You did wrong by placing some young Linnets in the nest at the particular period you name, for the Canary's eggs having only been set upon the requisite time these might possibly have been birds in them. If you wish for success with your Canaries you must not waste time by giving the hen other birds to rear. A little practice will enable you to tell at the end of six or seven days after the eggs have been set upon whether they will be fertile. When you examine the eggs lift them with your thumb and finger lengthways, and if they appear dull against a strong light you may consider them good. You may remove the Canary cock to the other hen, and leave the one with the Linnets to bring them up, as you say she is so "fussy with them." The usual food—egg, bread, and green food, will suffice for the hen to rear them. For knowledge of general management purchase a treatise upon Canaries, which will guide you, and if after that you are in further "trouble," we shall be happy to extricate you. Devote your attention to Canary breeding, and let the wild birds bring-up their own young. Did it occur to you as to the distress you must have caused when taking away the young Linnets from their parents? And we may further ask, have you studied the Wild Birds' Preservation Act? German paste is good for Larks and other birds, whether they be of the granivorous species or whether they feed upon seeds, insects, or berries. We give our Canaries, Goldfinches, and Linnets an oc-

casional treat of a little when mixed with chopped egg, which is a good occasional diet to encourage a cock bird in his vocal powers.

FINCHES IN AN AVIARY (Mrs. E.).—All the birds named being seed-eaters there will be no necessity to provide caterpillars or grubs. Let the birds have a plentiful supply of building materials, such as delicate twigs and fibrous roots, besides moss and hair. The fittings you have mentioned will suffice, but no doubt you will have less success with the Bullfinches than the other birds. The Greenfinches will do very well if supplied with hemp, linseed, the kernels of juniper, unripe barley, turnip seeds, thistles, and salad. Let them also have access to the egg and bread you may provide for the Canaries; and to keep Greenfinches tranquilised they should not be kept short of food. If so when at the feeding-trough they will snap and peck somewhat severely at other smaller finches, which become quickly overpowered by the strength and power of their adversaries' beaks. Generally Greenfinches hatch their young well. The Blakes will not far smile for food out of the variety provided for the other birds, still in summer they are fond of the seeds of pines and firs. Considering they are such small birds, they, too, are very pugnacious and voracious over their meals, but they breed readily. One of their maladies is epilepsy, of which they are somewhat subject. Let a bath be given daily, not that the Blakes scarcely ever immerse itself like other birds, still it loves a sprinkle or slight splash, and is proud when preening itself and keeping its feathers in trim. For the Bullfinches such food as steeped rape seed, grits soaked in milk, berries of the service tree, buds of the red beech, maple, oak, and pear trees, grass seeds, hemp (springing), and crushed biscuits and salad may be supplied. Amongst your collection you may possibly have something worth looking at when the breeding season has terminated. If so, and there be any difficulty in deciding as to the true breed of any of the young stock, we shall be glad to assist you. It is just possible that some specimen may be worthy of winning for you high honours, if your ambition or inclination induces you to exhibit.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 37' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.						Rain.
1876.	May.	Baromet. at 30 in. at 9 A.M.	Hygromet- er.		Direction of Wind.	Temp. of Air at 5 feet.	Shade Tem- perature.		Radiation Temperature		In sun.	On grass	
			Dry.	Wet.			Max.	Min.	In sun.	On grass			
Inches.	deg.	deg.	S.	deg.	deg.	deg.	deg.	deg.	deg.	In.	In.		
We. 24	29.718	54.0	47.5	S.	61.7	58.3	48.5	78.3	57.3	0.000	0.000		
Th. 25	29.761	47.3	46.1	N.	59.7	58.3	46.4	108.6	46.3	0.000	0.000		
Fri. 26	29.903	48.3	47.5	W.	60.4	55.3	48.1	77.8	52.3	0.004	0.004		
Sat. 27	29.882	55.7	51.9	N.W.	51.0	54.8	47.9	105.3	48.3	—	—		
Sun. 28	30.318	54.0	53.4	W.	58.3	57.8	48.3	112.4	48.3	—	—		
Mo. 29	30.308	50.5	53.5	W.	58.5	70.8	49.3	119.8	48.3	—	—		
Tu. 30	30.107	58.3	53.3	W.N.W.	54.5	71.1	44.5	110.4	46.7	—	—		
Means	29.949	54.3	53.2		51.6	58.5	46.0	100.5	48.5	0.014	0.014		

REMARKS.

24th.—Morning dull but fair; rain commenced at 9.45 A.M., and continued nearly all day.

25th.—Wet morning; fine afterwards, but with occasional showers.

26th.—Wet morning; after part of day fine; evening close.

27th.—Dull damp day, warmer, occasional slight sprinkles of rain.

28th.—Fine and pleasant spring day, but rather close.

29th.—Fine throughout, sun at times very hot.

30th.—Rather hazy, but otherwise fine.

The temperature has been rather higher than that of the previous week, but the increase is solely due to the overcast nights, which have checked radiation, and thereby kept up the night temperatures. The air has been very calm throughout.—G. J. SYMONS.

COVENT GARDEN MARKET.—MAY 31.

Business has been brisk since our last report with no alteration in prices, the market being well supplied with forced fruits and vegetables.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	6	0	0	Mulberries.....	lb.	0	4	0
Apricots.....	box	1	6	0	Neotaries.....	dozen	0	0	0
Cherries.....	box	1	6	0	Oranges.....	✓ 100	6	0	0
Chestnuts.....	bushel	0	0	0	Peaches.....	dozen	8	0	0
Currants.....	1 sieve	0	0	0	Pears, kitchen.....	dozen	0	0	0
Black.....	do.	0	0	0	dessert.....	dozen	3	0	0
Figs.....	dozen	0	0	15	Pine Apples.....	lb.	0	0	0
Guavas.....	lb.	0	0	0	Plums.....	1 sieve	0	0	0
Cobs.....	lb.	0	0	1	Quinces.....	bushel	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	3	0	0	Strawberries.....	on.	0	0	0
Lemons.....	✓ 100	6	0	12	Walnuts.....	bushel	4	0	0
Melons.....	each	6	0	12	ditto.....	✓ 100	1	6	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus.....	dozen	4	0	6	Leeks.....	bushel	0	4	0
Artichokes.....	✓ 100	1	6	0	Mushrooms.....	potile	1	6	0
French.....	bundle	1	6	0	Mustard & Cress punnet	0	2	0	0
Beans, Kidney.....	✓ 100	1	0	0	Onions.....	bushel	3	0	0
Beet, Red.....	dozen	1	6	0	pickling.....	quart	0	0	0
Broccoli.....	bushel	1	6	0	Parley.....	doz. bunches	2	0	0
Brussels Sprouts.....	1 sieve	0	0	0	Peas.....	quart	4	0	0
Cabbage.....	dozen	1	0	0	Potatoes.....	bushel	2	0	0
Carrots.....	bunch	0	4	0	Kidney.....	do.	3	0	0
Capisauls.....	✓ 100	1	6	0	New.....	lb.	0	2	0
Cauliflower.....	dozen	1	0	0	Radishes.....	doz. bunches	1	0	0
Celery.....	bundle	1	6	0	Rhubarb.....	bunch	0	0	0
Colworts.....	doz. bunches	0	4	0	Salsify.....	bundle	0	0	0
Cumbers.....	each	0	4	0	Scorzonera.....	bundle	1	0	0
Endive.....	dozen	1	0	0	Seakale.....	bushel	0	0	0
Fennel.....	bunch	0	8	0	Shallots.....	lb.	0	2	0
Garlic.....	lb.	0	8	0	Spinach.....	bushel	4	0	0
Herbs.....	bunch	0	8	0	Tomatoes.....	dozen	1	6	0
Horseradish.....	bundle	4	0	0	Turnips.....	bunch	0	0	0
Lettuce.....	dozen	0	6	0	Vegetable Marrows.....	0	0	0	0
French Cabbage.....	1	6	0	0					

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JUNE 8-14, 1894.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. a.	
8	Tu	Royal Horticultural Society Great Summer Show	70.6	46.4	58.5	8 46	8 12	10 22	8 57	16	1 10	180
9	F	Quekett (Microscopical) Club at 8 P.M. [closes.	70.8	47.3	59.0	8 45	8 18	10 59	4 57	17	0 59	181
10	S	Royal Botanic Society at 8.45 P.M.	69.5	46.9	58.2	8 45	8 15	11 22	6 5	18	0 47	182
11	Sun	TRINITY SUNDAY.	72.1	47.6	59.9	8 44	8 14	11 39	7 18	19	0 35	183
12	M	Royal Geographical Society at 8.30 P.M.	71.4	48.1	58.8	8 44	8 15	11 54	8 38	20	0 33	184
13	Tu	South Essex (Leyton) Show.	71.9	47.4	59.5	8 44	8 15	morn.	9 48	21	before	185
14	W	York and Swaffham Shows open.	72.6	47.9	60.8	8 44	8 16	0 6	11 2	22	0 2	186

From observations taken near London during forty-three years, the average day temperature of the week is 71.5°; and its night temperature 47.6°.

THINNING GRAPES AND WEIGHT OF CROP ON VINES.



HESE are two of the most important considerations in successful Grape culture, as on the judicious regulation of the bunches depends the ultimate quality of the fruit, and very often the future success of the Vines; and it is impossible for the berries to attain to perfection unless they are well thinned-out from the first.

All superfluous bunches should be cut off before thinning the berries is commenced.

It is a great waste of labour to thin many of the berries on bunches which are removed shortly afterwards; but at the same time it is a bad plan to cut away any great number of the bunches until it is clearly understood which are likely to be the best set and formed. With such as the Black Alicante no great mistake can take place, as it never fails to set its berries well; but varieties of the Muscat tribe, particularly Canon Hall, cannot be depended on, and it is impossible to tell which to select until the berries are somewhat advanced in size. When the bunches are evenly distributed over the Vine it will never be necessary to allow two bunches to remain on one shoot. Exceptions to this rule may be allowed when there are many bunches on one part of the Vine and none on another. Vines in good health very often produce two bunches on nearly every shoot. The best of the two is generally that nearest the spur, and unless this one is very much inferior to the outermost one it should always be preferred, as the further the bunch extends from the main rod the more room is needed, or overcrowding occurs.

Having decided thus far with a Vine bearing many bunches there need be no wavering in removing the worst bunch of each two. Before going to this length in practice, however, there is the age and capabilities of the Vines to be taken into consideration. Some Vines are allowed to bear fruit the second year after being planted, but their fitness for this entirely depends on the quality of the Vines when they were planted and the progress they make immediately after that. In this way some Vines are as capable of bearing fruit the second year as others are the third and fourth. When puny cheap canes are planted it is neither wise to let nor expect them to bear fruit for two or three years afterwards; but when strong well-developed canes, such as would fruit as "pot Vines," are planted, they are not long in either producing fruit or becoming able to bear it without injury to themselves. Supposing some strong canes to have been planted last spring and made good progress throughout the summer, the young rod would be left sufficiently long at pruning time to produce a number of side shoots. Many of these would produce bunches this spring, and they should be quite capable of bearing, at least two of them; and the stronger free-fruited varieties, such as Black Hamburghs, might be allowed to ripen three or four bunches.

It is not wise to fruit young Vines heavily during the

first, second, and third years of their growth, as this course has a tendency to cripple them prematurely; but it is a mistake to let vigorous young Vines become two or three years old before fruiting. Perhaps the full capabilities of a young Vine two years planted would be the maturing of twelve bunches. I have seen those planted as supernumeraries to bear heavy crops for two or three years until the permanent Vines had gained strength under light cropping, ripen this number of nice-sized bunches well. As it is generally free-fruited sorts which are planted for this purpose they should be fruited severely, especially if they are started somewhat early in the season, as a Vine with a heavy crop will ripen it thoroughly more freely with the assistance of plenty of sun than in the dull, cold, short end days of autumn.

Any bunch which may appear on the leading shoot on young Vines is seldom allowed to form part of the crop. It is difficult to understand why it should not do so, as it is very often one of the finest bunches. It is thought to weaken the leading shoot; this is rarely visibly the case, as it may be observed that most leading shoots are nearly if not quite as thick by the time the berries are beginning to need any support as they are when the fruit is ripe, and a bunch on the leading shoot does not interfere with the ripening of the wood above it.

But coming to a straight question—What weight of fruit is a fair crop for an ordinary strong established Vine? From 8 lbs. to 8½ lbs. to every 2 feet of main rod is a safe and remunerative crop for all such Vines, and those who are bad ocular judges of weight will not err far by leaving a bunch on every other shoot up each side of the rod.

Vines in pots which are only to bear one crop and then be thrown away stand cropping heavily—eight, ten, and twelve bunches, according to the strength of the canes, seldom prove too many when plenty of feeding in the form of guano water and such like is applied throughout the time the fruit is swelling. Pot Vines which are to be fruited a second year should not be cropped so heavily; but this is not the most profitable way of dealing with Vines in pots.

Grape-thinning is a more tedious and difficult undertaking during three or four weeks about this time than it is throughout all the former part of the season. Many late Grapes require attention now, and there is generally as much work in thinning one dozen bunches of Black Alicante as there is in three or four times that number of any other sort; Lady Downe's require more clearing than most other kinds. Where there are many to thin and few hands to accomplish it, it is a good plan to begin immediately the berries are formed, as otherwise many of them will be too far advanced before they are reached. The thickest-set bunches should be done first. At all times the scissors require to be very carefully handled, or the points may injure the berries which are left to form the bunch.

Varieties with enormous berries, or which swell to that size, such as Duke of Buccleuch and Gros Colman, require to be much more thinned out than such as Royal

Muscadine, Frontignans, or even the Black Hamburg. These large-berried kinds if not sufficiently thinned become jammed, and the berries burst before they are ripe. Over-thinning is an evil, but it is not such a great one as under-thinning, especially where the fruit has to be kept throughout the greater part of the winter. When the berries are closely packed against each other at that time they ferment and decay, but when the air can circulate amongst them it prevents anything of the kind from taking place. In clipping-out the berries the largest should always be left and the smallest removed. Some berries will swell to the normal size of the variety, and others in the same bunch will ripen not half the size. To the unaccustomed it is not easy detecting the difference at thinning time, but if the extreme berries are always left they will have every chance of turning out the biggest.

It is a great advantage in thinning to know and bear in mind what size the berries of any variety attain as a rule. Small bunches on languid Vines do not generally swell the berries to the full size, and this and all such like considerations must be taken into account. Unless in exceptional instances pot Vines do not swell their fruit to the extent of those planted out in borders. It may be finally stated that no standing gauge can be given or adhered to in Grape-thinning, but in ordinary cases the bunches will be found not far from being correct if the berries are thinned so as the point of the forefinger can be put in between each two of them.—J. MURK.

AUTUMN-FLOWERING PLANTS FOR THE MANSION.

DURING the dull winter months flowers are particularly appreciated, and the brighter they are the better, but in autumn there is so much natural beauty outdoors that most of us become satiated with colours in the formal flower beds. We have plenty of elegant foliage with the subtropicals, and flowers in the herbaceous borders can hold their own against all comers. Still there are boxes and vases in the mansion which must be filled.

If we attempt to compete with the flower beds for colours we shall fail, and in my opinion the subtropicals outdoors while they are in their prime are quite equal to any effect ordinary people can produce with foliage plants indoors. *Ricinus*, *Azaleas*, *Zea*, *Cannas*, &c., may be thought more common than *Palms* and *Dracenas*, but that does not make them less beautiful in my estimation so long as they are well arranged and the place is not overdone with them.

The great fault of English gardeners is to overdo and then condemn altogether. Subtropical gardening has long been overdone in many places, but I shall not condemn it any the more for that. There is room for this style as well as for the common bedding plants, carpet bedding, herbaceous, and mixed borders, and for that which I must own I have a weakness for, semi-natural gardening—i.e., so arranging plants that with the uninitiated exotics may pass for natives, and at the same time not offend the eye of the best informed nor the taste of the most refined. Because a Lily happens to grow well and look well in a space between *Rhododendrons*, it must not be imagined that a hundred Lilies there would add a hundred-fold to the beauty: they would probably produce a vulgar and glaring failure. A bit of *Forget-me-not* taking care of itself amongst the bushes is very pretty, but repeat it in half a dozen other places and it would look weedy. This, however, is not my subject at present; I have written about it before, and hope to do so again.

August, September, October, and November have to be provided for indoors, not in a beautifully lighted and well-warmed conservatory—that is a comparatively easy matter—but in dry rooms and corridors, which are dark and draughty however beautiful. The plants when they have been there for a time will, if not in a suitable condition for the rubbish heap, require at least a considerable amount of nursing to bring them again into a respectable form. They must be plants which look well, or the architectural and other ornaments would throw them quite in the shade. They must be different to those in the flower beds or they would appear vulgar, and still it will not do to use rare and costly plants. Some plants, however suitable for conservatories, will not do for the mansion; they do not last in condition there a sufficient time to pay for the trouble of growing them. I have found *Fuchsias* very disappointing in this respect. I have never had them more than a week in first-class condition, and have consequently given up growing them for this purpose.

Campanula pyramidalis is the best plant I know for lasting; it is sometimes good for seven or eight weeks—from the beginning of August to the end of September. It is not much trouble to grow, and it is hardy in sheltered spots; but if grown outdoors it should always be taken inside to expand its flowers, as they are incomparably better than when they open outside. It is best treated as a biennial, sown in May and grown-on in 6-inch pots during summer, sheltered in a cold frame from severe frost, and potted as soon as the flower stems commence rising in the spring. Pots may vary from 7 to 12 inches in diameter according to the vigour of the plants and the size they are required. Turfy loam suits them well.

Tuberose associates very well with the above, and are as easy to grow but not so hardy; they are very sweetly scented. The roots are received from abroad in December and January, are potted at once in rather heavy loam, and plunged in bottom heat. When they have started fairly into growth they are not particular about temperature, but will do well in either a hot house, a cold one, or a pit, according to the season they are required to bloom. I am growing a second time those I had last year, and they promise to be as good as the newly imported bulbs.

Vallota purpurea ought to be everybody's plant. There is nothing easier to grow, and there is certainly nothing more beautiful. Turfy loam with charcoal and a few half-inch bones with a greenhouse temperature suit it admirably.

Lilium auratum though flowering generally in July will, if grown behind a north wall, last well into August and sometimes even to the end of it. I, however, prefer this noble Lily outside, where it does almost if not quite as well as indoors, and its scent is too powerful for some people when confined.

Lilium punctatum flowers in August, and is decidedly best when its flowers expand indoors, as is also *L. lancifolium* and its varieties which flower in September. Turfy peat suits them best. They should be disturbed as little as possible, and when repotted it should be done immediately the leaves have become discoloured.

Begonia Weltoniensis is very useful and easily grown, likewise *Balsams* and *Salvia splendens*, with *Mignonette* and *Heliotrope* for scent.—WILLIAM TAYLOR.

SYRINGING.—No. 2.

THE presence of insects under the leaves, which syringing is intended to subdue, is mainly attributable to too high a temperature, too dry an atmosphere, and dryness at the roots. Under those conditions plants cannot long be free of thrips and red spider. Weakness of constitution is no criterion to go by as affirming the presence of these and other insect attacks, for weak plants may escape their ravages whilst a robust one of the same kind is severely infested; yet I consider that with a large extent of leaf surface imperfectly exposed to the action of air and light the tissues of the leaves will be so weakened as to receive greater injury from insects than plants with robust foliage. In almost all instances of early forcing of Vines and Peaches the foliage, for obvious reasons, is thinner in growth than that which is produced at a later period under the influence of more light and air. Thin flabby foliage can never by any after-exposure to light and air become stout and perfect in texture, and hence is particularly liable to injury by thrips and red spider. Thin flabby leaves do not usually become stout upon a return to bright weather, but more frequently the leaves are more or less browned and occasionally scorched. This in a great measure may be prevented by shading, or by early air-giving so as to prevent moisture from continuing on the leaves—a matter which may be usefully alluded to at the present time.

The neglecting to make any difference in the apportioning of moisture as between bright weather and dull is a cause of sappy growth, resulting in scorching or browning of the foliage and inviting the attacks of insects, which usually commence after the leaves are full-sized.

But it has been urged that syringing is a certain antidote of thrips and red spider. My observation and experience point in a different direction, convinced as I am that water driven against plant leaves has no other effect than freeing the leaves from parasites; but in no wise can water forcibly ejected over plants by a syringe be considered as a preventive measure—it acts by removing the insects, neither preventing their presence nor recurrence. A due amount of moisture in the atmosphere and of nutriment supplied by the soil are far more

efficacious against insect ravages than the mere use of the syringe.

It is a common practice to place plants making fresh growth, notably Camellias and Azaleas, in a warmer, closer, moister, and more shady atmosphere. This orthodox plan I at one time held to be of such importance that any departure therefrom would have been considered suicidal as to future prospects of flowering; but I now have collections of both these plants in a lofty airy house, and no artificial heat only to keep the temperature between 45° and 40°, and I do not think the plants have been syringed overhead a dozen times in seven years. Sufficient moisture is had from the floor surface, the drip from the plants through watering being considerable, for if there is anything these plants require it is thorough moisture at the roots; and if we want thrips on Azaleas keep them dry at the roots, deluging the top as much as we like, the road is clear for the insects. Atmospheric moisture alone does what is wanted for these plants; and so satisfactory is the result that I shall no more follow the "stew pan" system. If the foliage is free from dust there is no need of water over it, but is more injurious from causing the leaves of Camellias to spot, and those of Azaleas to brown at the ends and drop in winter than any benefit conferred in warding off insect attacks—in fact, the "stew pan" principle is most productive of Camellias casting their buds, from the moisture being so much less after the buds are formed and swelling to that afforded during the making of new growths. The evaporation from the leaves is so great that the buds lack support and drop, and with Azaleas a like tendency prevails in casting the leaves—viz., an overdryness after the buds are set, which not infrequently results in the buds formed becoming "dead," causing the emission of fresh growth from their base. Coolness, moisture, and light, with the powerful rays of the sun broken by slight shade, is what these and most plants with firm-textured leaves require, for plants, as a rule, with the hardest leaves suffer more from a dry atmosphere than those with thin or succulent foliage.

Evidence of the inutility of syringing over the foliage when a moist atmosphere is maintained is had from the now general practice of not syringing Vines, the most successful cultivators being as scrupulous of applying water to the foliage as were those of a former date in insisting upon its practice.

With but a few exceptions the syringe might, for purposes of distributing water over the foliage, be dispensed with, surfaces kept constantly moist being available for evaporation; and this with a properly regulated temperature must be calculated to meet the requirements of the plant better than water applied directly to the foliage. Moisture is given over the foliage naturally, and benefits the plants by freeing their upper surfaces of obstructing matter, the great stimulus to healthy growth being produced by the moisture afforded the roots—in fact, a moist soil for the roots and water disposed on surfaces available for evaporation is clearly nearer nature than forcing water against the under sides of the leaves of plants.

What would be the result of not syringing such subjects as Peaches I am not prepared to say at present, but it seems to me singular that these trees should require to be drowned twice daily to keep under red spider; but I think its necessity is a consequence of a too dry atmosphere—indeed I am about certain that from the amount of ventilation considered necessary, and the artificial heat required to maintain it, that the atmospheric moisture is very little as compared with the requirements of the foliage. I thought of solving this problem by increasing the sprinkling, and went so far as the stoning process without wetting the foliage or the appearance of red spider when the syringe was brought into play for the purpose of staving off its attacks. Nothing certainly is more certain than that water does not kill red spider. Drive it off the water may and does, when applied with a force greater than the resistive power of the insects.

Ferns are moisture-loving, delighting with very few exceptions in shade; but these plants do not require to have their fronds always dripping with water, or to have it ejected over them two or more times a-day. Some kinds are positively injured—notably Cheilanthes, Notholaenas, and Gymnogrammas; and none are benefited by the presence of water upon their fronds, except it be Leptopteris or Todea, with other of the Filmy Ferns. Even the Lattice-leaf Plant (*Ouvirandra fenestralis*), though an aquatic, is found to thrive best when watered overhead at least once a-day—proof decisive that water stationary upon the leaves is not an essential of successful culture.

Outdoors during early summer trees not unfrequently in long-continued dry weather suffer from insect attacks, aphides of varied species cluster upon the young growths and beneath the leaves, and a species of *Acarus* or red spider infests Plum and Apple, and a larger kind the Gooseberry, a larger still the Ivy, the two latter being found upon the upper surface of the leaves (as are attacks of red spider when syringing over the foliage is not resorted to); these all disappear or are comparatively annihilated upon a recurrence of moist weather, retaining their last hold of the under surface of the leaves, from which they assuredly are driven, but not by the force of water.—G. ABBEY.

ROYAL HORTICULTURAL SOCIETY'S GREAT SUMMER SHOW.

JUNE 7TH AND 8TH.

METROPOLITAN exhibitions have this year been unusually numerous, and also, it must be admitted, very good, without, however, presenting any features peculiarly striking or signally important. The prizes which have been offered have been on a liberal scale, some of the greatest of them being worthy of a better response—of keener competition, than was forthcoming at the exhibitions, the classes in which the greatest amounts have been offered being notorious for the few competitors who entered the lists. It was not to be expected that a Society having the prestige of the Royal Horticultural Society, which, with all the obstacles it has had to contend with, is still the greatest exponent of the horticulture of the nation—should have entered on a sensational policy of offering unheard-of amounts to attract professional support and public patronage. Such a policy is only necessary in new undertakings, where a name must be made, if possible, to compensate for a history. An old society, like an old family, needs no flourish to attract recognition, providing its age has not merged into feebleness. Only a short time ago this Society was apparently enfeebled, even almost to dissolution, but it has undergone a sort of revivification, has put on fresh strength, and won fresh confidence. Its exhibitions this year have shown a vast improvement, and important practical work has been done in a quiet way under its auspices. Yet with all this the offering of substantial awards has not been neglected, and the Council have combined spirit with judgment in the preparation of the schedule of this their principal summer show. Exhibitors, we are warranted in assuming by the great and gratuitous display of last summer, do not always enter the lists with the prime object of winning large prizes, but they enter with feelings of loyalty to horticulture, and exhibit to do honour to the art and to themselves. So long as that spirit exists there is no fear of the art degenerating, for it is an element powerfully sustaining in its nature, and where exercised will achieve successful and substantial results.

We have said, however, that substantial prizes were offered for competition at this Show. These, by a glance of the schedule, are found to exceed £800—namely, £480 for plants, £102 for Roses, and £85 for fruit. In four classes of stove and greenhouse plants we find £76 provided; in three classes for Orchids £59; in the *Pelargonium* classes £53; and for Roses in pots £56. The prizes for cut Roses also were liberal, but read somewhat strangely by the light of the outdoor growth, which had scarcely pushed into leaf, much more into bloom, so inclement has been the season. Such, then, is an outline of the provision made for the Show, and we will now look in what manner the invitations have been responded to. We did not expect a great Show—few were sufficiently sanguine for that—knowing how much many plants were worn, and how many exhibitors might be expected to be exhausted. The resources of our nurseries and gardens are, however, great, and ardent cultivators are not tired with trifles, hence the really admirable display that was brought together under the great tent. Judging the plants by the effect which they produced, we must write the Exhibition fully equal, if not superior, to the best displays of the year. Previous exhibitions have been good, but in them formally-trained flowering plants have predominated; but here the richness of the fine-foliated plants and the tropical appearance of the Tree Ferns, the distinct Ivies in pots, and the Conifers, produced a fine contrasting effect with the Roses, Azaleas, *Pelargoniums*, Orchids, and stove and greenhouse plants. Although the competition was not great in the specimen-plant classes, and although some exhibitors who entered failed to put in an appearance, yet the large tent was fairly well filled, so that the Show as a whole was better than could have been expected, and what was lacking in some of the classes was compensated for by the excellence of the miscellaneous collections.

In Class 1, for twelve stove and greenhouse plants (amateurs), Mr. Child, gardener to Mrs. Torr, Garbrand Hall, had the first place with a bright and fresh collection, including *Aphelaxes*, *Chorosema rotundifolia*, *Erica coccinea impressa*, *Anthurium Schærzerianum*, *Dracophyllum gracile*, *Pimelea Hendersonii*, &c. The second prize was awarded to Mr. Wheeler, gardener to

Sir F. H. Goldsmidt, Bart., for a very creditable collection. In the corresponding nurserymen's class for nine plants the competitors were Messrs. Jackson & Sons, Kingston, and Mr. B. S. Williams, Holloway, who were placed in the order named for the same fine specimens which have been noticed in previous reports. For a group of stove and greenhouse plants arranged for effect, and not occupying more than 800 square feet, Mr. Wills, Royal Exotic Nursery, South Kensington, had the first place for a group striking by its boldness and informality of treatment. Tall plants, Palms, &c., were thinly placed, the groundwork being occupied by *Spiræas*, *Lilies*, *Pandanuses*, &c., the whole being fringed with *Lysimachia nummularia*. Mr. Aldous, florist, Kensington, had the second place, in which flowers predominated over foliage.

ORCHIDS.—For twelve plants (amateurs), Mr. Helms, gardener to F. A. Philbrick, Esq., 28, Avenue Road, Regent's Park, had the first place with small but well-bloomed plants in choice varieties. For twelve plants (nurserymen), Mr. B. S. Williams had the first place with a rich group including *Cypripedium superbiens*, *barbatum superbum*, and *spectabile* (grand); *Vanda suavis*, *Mesopitidium sanguineum*, *Epidendrum vitellinum majus*, *Cattleya Mossii*, &c., all in superb condition. Messrs. Jackson & Sons, Kingston, and Mr. Bull, Chelsea, respectively had the remaining prizes for superior collections, *Cattleya Mendellii* in Mr. Bull's group being particularly charming. For six Orchids (amateurs), Mr. Loveman, gardener to J. G. Hepburn, Esq., Siderup Place, Kent, was first with a good collection. In this group *Oncidium macranthum* was in admirable form. There were also capital examples of *Dendrobium Devonianum* and *Dalmanianum*, *Sobralia macrantha*, *Angulos Clowesii*, and *Phaiusopsis grandiflora*; Mr. Helms being second with, amongst others, good examples of *Dendrobium Falciforme*, *Odontoglossum varicellatum*, *Saccolabium retusum* and *Cypripedium niveum*. The third prize went to Mr. Child, gardener to Mrs. Torr, Gresham Hall. Mr. Downing, gardener to Lord Londesborough, exhibited in the miscellaneous class *Cattleya Wagerii*, and magnificent examples of *Odontoglossum varicellatum*, one plant having thirty flowers on four spikes from one pseudobulb, and the other forty-three flowers from three pseudobulbs. A gold medal was awarded to the grand specimen of *O. varicellatum* first noticed, which is probably the finest plant (and a superb variety) that has ever been exhibited.

NEW PLANTS.—For twelve new plants (Orchids excluded) introduced in 1874, 1875, and 1876, Mr. Bull had the first place with a group of great excellence, the plants not only being new but large and in perfect condition. It included the grand Palm *Pritchardia grandis*, the only specimen, we believe, in Europe; *Kentia Moorei*, the imposing *Aralia splendens*, a charming pair of *Bertolonia splendens*, *Blandfordia princeps*, and other plants which have been previously noticed. Mr. B. S. Williams had the second place, his group including *Aracaria Napoleon Bartmanni*, a distinct and spreading form of *A. exelsa*; *Dieffenbachia Parlatoresii marmorata*, one of the most distinct and promising of the family; *Sarracenia Williamsii*, *Photinia serrulata variegata*, and other plants which were exhibited at the Royal Aquarium. For six new plants exhibited for the first time in England Mr. Bull's group was especially noticeable as containing the new *Maranta Massangeana*. This is the plant that won the grand gold medal as the best new plant exhibited at the Great Exhibition at Brussels. It is a plant of great distinctness and beauty. The leaves are ovoid, 5 inches long by 3½ broad; the ground colour is a velvety maroon with a silvery grey centre and distinct creamy white veins. Its colours, however, are not quite fixed, and vary with the age of the leaves. The remaining plants in this collection were *Dipladenia Regina*, white faintly tinged with pink; *Zamia princeps*, the fine *Cycad Katakidozamia Hillii*, *Ocotea Rex*, and *Dieffenbachia Shuttleworthii*. In this class Mr. Williams had the second place with his Aquarium prize collection.

AZALEAS AND HEATHS.—In the nurserymen's class for eight plants Mr. Turner had the first place with the healthy well-bloomed medium-sized specimens which have been noted at previous shows; Mr. Wills being placed second for standard plants with heads 2 feet across and densely flowered. For eight plants (amateurs), Mr. Child, gardener to Mrs. Torr, had the first award for really good specimens, varying from 2 to 5 feet in height, good alike in flower and foliage; Mr. Ratty had the second place with well-bloomed standard and pyramidal plants in varieties which have been previously enumerated; Mr. Wheeler having the third prize for large plants, but some of them being thinly bloomed. For nine *Briars* (open), Mr. Wheeler, gardener to Sir F. H. Goldsmidt, Bart., had the first prize for irregular-sized plants. In the amateurs' class for six plants Mr. Legg, gardener to S. Balli, Esq., was first with healthy and well-bloomed half-specimens; Mr. Wheeler having the second place for large and small plants.

FINE-FOLIAGED PLANTS.—For twenty plants in pots not more than 12 inches in diameter Mr. Bull was unapproachable. He set up a splendid group, including *Cycads*, *Palms*, *Dracænas*, including *D. Goldiana*; *Crotons majesticum*, *spirale*, and volu-

tum; *Curello recurvata variegata*, *Phylloctenium Lindenii*, &c., a splendid group. Mr. Wright, The Nursery, Lee, Kent, had the second place also with an admirable collection, *Pandanus Veitchii* being particularly pure in its markings; Mr. Wills having the third prize for a good group, in which *Yucca filamentosa variegata* was conspicuous by its excellent state. In the class for nine fine-foliaged plants (amateurs), Mr. Legg, gardener to S. Balli, Esq., Cleveland House, Clapham Park, had the first honours for a grandly-grown group. Amongst the Palms *Geonoma pumila* was in splendid condition, as also were *Stenandrium grandiflorum* and *Ocotea Weddelliana*. The three *Crotons* (*Johannis*, *variegatum*, and *Weismannii*) were in perfect health and colour, and *Anthurium crystallinum*, *Alseodora macrocarpa variegata*, and *Dracæna Shephardii* were superbly exhibited. Mr. Harrow, gardener to H. Bessemer, Esq., Denmark Hill, had the second place with ponderous plants, which could only have been beaten by surpassing quality.

PLANTAE ORNAMENTALES.—For nine show varieties (nurserymen), Mr. Turner, Slough, had the place of honour with a splendid collection, the best being *Charlemagne*, *Ruth*, *Pompey*, *Protector*, *Isabelle*, *Scottish Chief*, and *Claribel*, sorts which should be grown by everybody. Messrs. Dobson & Sons had the second place with remarkably well-bloomed specimens—*Brigitte*, *Atlanta*, *Betrothed*, *Conqueror*, and *Charles Turner* being the best varieties. In the corresponding amateurs' class for the same number of plants Mr. James, gardener to W. F. Watson, Esq., Redles, had the post of honour with plants 2 to 3 feet in diameter, having vigorous foliage and fine flowers; Mr. Ratty, gardener to B. Thornton, Esq., Sydenham Hill, having the second place with equally large but less robust specimens. In Mr. James's group *Rosa*, *Rosa floribunda*, and *Prince Leopold* were the most striking varieties. In the nurserymen's class for six Fancy varieties Messrs. Dobson & Sons, Isleworth, had the first place with medium-sized, symmetrical, and well-flowered specimens; Mr. Turner, Slough, being second with plants which required another week to bring them to perfection, the whole of the plants in these collections consisting of the good old varieties which are well known; and in the amateurs' class for the same number of plants Mr. James had his old position with unrivalled specimens—semi-globes 4 feet in diameter, *Rilee Beck*, *Princess Teak*, and Mr. Alfred Wigan being the superior varieties.

ROSES.—For twenty Roses in 8-inch pots (open), Mr. Turner was predominant with the fresh plants and noble blooms which characterise his productions. Etienne Levat, Villaret de Jeysses, J. S. Mill, Duchess of Edinburgh, Rev. J. B. Camm, Princess Beatrice, and La France were all in superior form, and in the pink of perfection. For twelve Roses in pots (nurserymen), Mr. Turner is again to the fore with grand plants and exhibition blooms. Edouard Morren was in marvellous condition, and Miss Ingram was little if anything behind it, while Charles Lawson was larger than either—a noble cone with 180 blooms. This is a grand finish to a successful season, in which Mr. Turner is more than ever fortified in his position as the premier Rose grower and exhibitor. Messrs. Paul & Son, Chessington, had the second place with good plants yet not quite in perfection. Some good boxes of cut blooms were exhibited; the awards will be found in the official list.

Tree Ferns and Palms were well represented, Mr. Williams and Mr. Wills being the successful nurserymen exhibitors. For four Palms (amateurs), Mr. Harrow, gardener to H. Bessemer, Esq., was first with *Livistona altissima*, *Thrinax elegans*, *Ocotea Weddelliana*, and *Kentia Fosteriana*, all in capital condition; Mr. Wheeler, gardener to Sir F. H. Goldsmidt, Bart., having the second place with smaller plants. Hardy Ferns were very fairly exhibited without including anything of a novel character. Mr. Stone, gardener to C. Watson, Esq., Manor House, East Aston, had the first place; Mr. James, Redles, being second. His collection including a splendid example of *Athyrium Filix-femina plumosum* worthy of special note; Mr. Jenkins, gardener to L. Clarke, Esq., Hitherwood, Sydenham Hill, having the third place for small plants.

For twelve *Clematises*, Mr. Maurice Young, Milford Nurseries, Godalming, was the only exhibitor, and had the first prize for large plants in tube, but the blooms were not quite fully expanded; they were all dark-coloured varieties. For twelve *Agaves* Mr. Croucher, gardener to J. T. Peacock, Esq., Sudbury House, Hammersmith, was the only exhibitor, and staged a valuable group, including the new *A. Victoria Regina* and other fine kinds for which Mr. Peacock is celebrated. For six *Crotons* (open), Mr. Harrow, gardener to H. Bessemer, Esq., had the first place with enormous specimens in good health and colour, and worthy of the honours they received. For twelve *Dracænas* and *Cordylines* Mr. Bull had the first place for the well-grown and distinct kinds which he has previously exhibited; the second honours going to Mr. Wills.

MISCELLANEOUS.—These collections contributed greatly to the effect of the Exhibition. The central bed was occupied by Messrs. Veitch & Sons, and the group, both by the value of the plants and their superior arrangement, formed a collection of

surpassing beauty, attracting, as it deserved, the lion's share of notice by visitors. The collection was composed of fine-foliated and flowering plants, the former comprising Palms, Crotons, Dracenas, Aralias, Ferns, &c.; the latter Orchids in great richness and variety, hybrid Rhododendrons, Begonias, Boronias, *Asalea indica imbricata*, splendid Gloxinias, a magnificent pan of *Iris sultana*, grown in the open air, and which attracted much notice, a new *Hemantthus cinnabarinus*, very striking and effective, *Tillandsia Zahnii*, &c. This superb collection of plants was worthy of the prominent site which it occupied, and of the high position of the exhibitors. Mr. Maurice Young arranged a very fine group of Conifers, including his new Golden Juniper, very fine; richly-berried Junipers, &c., and a gold medal was worthily awarded. Silver medals were awarded to Mr. Laing, Stanstead Park; Mr. B. S. Williams, Holloway; Messrs. Osborne & Sons, Fulham; and Mr. Wills for excellent collections of Palms and decorative plants; to Mr. Parker, Tooting, for hardy plants and a splendid collection of Irises (out blooms); to Mr. Turner for Irises in pots; and to Messrs. Veitch for a group of Japanese Asters; to Mr. Waters, gardener to H. Mongredien, Esq., Forest Hill, for a very fine collection of Calceolarias; to Messrs. Hooper & Co., Covent Garden, for cut flowers of bulbous plants, a bronze medal being awarded to Mr. Kinghorn, Sheen Nursery, Richmond, for Saxifraga nepalensis. The awards for other collections, which we were unable to inspect, will be found in the advertised prize list.

MR. BULL'S PRIZES.—The silver cups offered by Mr. Bull of Chelsea were competed for on this occasion, and the plants exhibited in these classes made a most effective display. In the amateurs' class Mr. Webb won the cup with a grand group. In the nurserymen's class the cup went to Mr. Wright, Lee, Kent, Mr. B. S. Williams having the second-prize cup; Mr. Rann, Handcross Park, Crawley, Sussex, having the cup as a first winner of Mr. Bull's prizes.

FRUIT.

The display of fruit was not extensive. Ten Pine Apples were put up. In the class for two Queens Mr. H. Plummer, gardener to R. Thornton, Esq., Cannon Hill Park, Merton, Surrey, took first with well-ripened but small fruit; second Mr. W. Bond, gardener to G. Smith, Esq., The Beeches, Weybridge; and third Mr. W. Ward, gardener to the Earl of Radner, Longford Castle, Salisbury. For a Pine of any other kind Mr. H. Bertram, gardener to R. T. Crawshaw, Esq., Cyfarthfa Castle, was a long way first with a fine Black Prince; second Mr. W. Ward, Longford Castle, for a good Providence.

Grapes.—For three bunches of Black Hamburgs Mr. Warren, gardener to the Earl of Portsmouth, Hurstbourne Park, Hants, was the only exhibitor, and took first with medium-sized bunches and fair berries, but not highly coloured. For three bunches of Black Prince Mr. J. Bolton, gardener to W. Spottiswoode, Esq., was first with highly finished berries but only moderate bunches. For the same kind Mr. G. Holliday, gardener to J. Morris, Esq., Castle Hill, Bletchingley, was a good second. For three bunches of Muscat of Alexandria, by far the best came from Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, Ilford; the second prize going to W. B. Tristram, Esq. (Mr. T. Edwards, gardener), with fruit which in appearance was not half ripe. For three bunches of Buckland Sweetwater Mr. Douglas was first and the only exhibitor, but was in his usual style of excellence. For a Grape of any other kind Mr. Douglas showed some excellent examples of Canon Hall Muscat, and took the first prize.

For six Peaches of any kind there were two or three good dishes shown. The best came from Mr. Burnett, gardener to Mrs. Hope, The Deepdene, Dorking, who secured the first prize with Bellegarde; Mr. Wm. Coleman, gardener to Earl Somers, Eastnor Castle, being second with a capital dish of Early Grosse Mignonne; third, Mr. G. Sage, gardener to Earl Brownlow, Ashridge Park.

For six Nectarines of any kind Mr. Holliday, Castle Hill, Bletchingley, was first with a good dish of Lord Napier; second Mr. W. Gardiner, gardener to E. P. Shirley, Esq., Lower Ealington Park, Stratford-on-Avon, for Violette Hâtive. For any kind of Fig there was only one exhibitor, this being Mr. Miles, gardener to Lord Carlington, Wycombe Abbey, with a capital dish of Brown Turkey. For fifty Black Cherries Mr. Miles was a long way first with Black Circassian; second Mr. Warren, Hurstbourne Park, with May Duke. For a dish of white Cherries Mr. Miles was again a long way ahead of his opponent Mr. Warren, who was second for a dish of Elton.

For twenty-five Strawberries of the British Queen type Mr. Douglas took first honours with a capital dish of Dr. Hogg. Mr. W. Earley, The Gardens, Valentines, Ilford, was second with the same variety. For twenty-five fruits of Sir J. Paxton or President Mr. Douglas was once more first with President; while the second prize fell to Mr. J. W. Ohard, gardener to Sir F. Bathurst, Clarendon Park, Salisbury, for a good dish of Sir J. Paxton; Mr. W. Ward, Longford Castle, Salisbury, being placed third.

There were about a dozen Melons shown. In Class 61, for a

green or pale-fleshed kind, Mr. W. Coleman, Eastnor Castle, was first with a Victory of Bath; the second prize falling to Mr. J. Atkins, Lookings Gardens, Wantage, for Colston Bassett; Mr. Holliday, Bletchingley, being third for a small Golden Queen. In the class for scarlet-fleshed kinds Mr. W. Sanders, gardener to J. East, Esq., Longstock House, Stockbridge, Hants, and Mr. W. Coleman were respectively first and second for Read's Hybrid; Mr. T. W. Bond, The Bushes, Weybridge, having the third place for a sort named Golden Queen, but which was more like the old Cantaloupe, and certainly not the kind it was named. In the miscellaneous class a bronze medal was awarded to a most excellent box of a Tomato named The Stamfordian, certainly very fine fruit, and which we hope to hear more about, as Mr. Miles, the exhibitor, is growing it largely.

VEGETABLES.

For the prizes offered by Messrs. James Carter & Co. for Peas there was only one exhibitor, that being Mr. W. G. Pragnell, gardener to G. D. W. Digby, Esq., who gained a first prize for four dishes—viz., William I., Extra Early Premium Gem, Sutton's Emerald Gem, and Carter's First Crop; all good, but William I. standing pre-eminent. For Messrs. Sutton & Sons' prizes for Peas there were two exhibitors. Mr. W. G. Pragnell was a long way first with William I., Sutton's Ringleader, Laxton's Unique, Emerald Gem, Extra Early Premium Gem, and Sutton's Bijou. The second prize was taken by Mr. H. W. Ward, Longford Castle, with, besides some of those named, Dickson's First and Best, Dillistone's Prolific, and Sangster's No. 1. The season has evidently told upon these vegetables, for none of the collections were equal to those shown last year.

FRUIT COMMITTEE.—H. Webb, Esq., in the chair. Five very fine clusters of fruit of the Chinese Loquat, were sent by R. B. Blyth, Esq. (Mr. A. Coulborn, gardener), Wolverhampton. They were as fine specimens as were ever exhibited, and were unanimously awarded a cultural commendation. Mr. John Harper, Victoria Park, sent a specimen of a twin Cucumber; they were two perfect specimens joined together the whole length of the fruit. Four Peas were sent by R. W. Anderson, Esq. (Mr. R. Butland, gardener), Kirk Hammerton Hall, York. They were thought to be Chaumontel, but they were not melting. Mr. J. Woodfield, The Gardens, Osberton, Worksop, sent a large netted green-flesh Melon, but it was rather past its best, and was not considered of superior quality.

Messrs. Barr & Sugden of 12, King Street, Covent Garden, sent three very fine specimens of the Bahia, or Navel Orange. They were very large and of excellent flavour. A vote of thanks was awarded. A good dish of Limes was sent by the same exhibitors.

A moveable trellis (West's Patent) was exhibited by Mr. W. G. Compton, Hibernia Wharf, London Bridge. The trellis can be let down by machinery to facilitate the thinning of Grapes, and also to allow of getting at the rafters to clean and paint them more readily. It would also be well adapted for an early Cucumber house. As the leaves come in contact with the glass the trellis could be gradually lowered. It seems a very ingenious contrivance and worthy of trial.

FLORAL COMMITTEE.—W. B. Kellook, Esq., in the chair. There was not a large number of new plants in the Council room, but a very good group came from Messrs. J. Veitch and Sons, Royal Exotic Nursery, King's Road, Chelsea. A first-class certificate was awarded to Gloxinia Excelstar, a very fine variety with erect flowers of the largest size, crimson, with a purplish lake throat. Croton Mooreanus, a species from the South Sea Islands, has noble foliage with something of the character of C. Welsmanii. The same firm also exhibited Begonia Paul Masurel with large lively red flowers; Maedevalia incocharis, a small species having bluish flowers with a purple throat; Cyrtopodium superciliosum, a cross between C. barbatum and C. Veitchii, but not superior to its parents; Dracaena Macarthurii, a neat-habited species with stiff erect leaves finely coloured; Acalypha macrophylla, with large bronzy red foliage blotched with olive green; Ficus Mooreanus, which has large dark green leaves; Caladium Madame de la Devanaye, Paul Veronese, and Souvenir de Madame Edouard Andre; Osmunda palustris, a very dwarf species with neat fronds; Adiantopsis radiata, a very elegant Fern with palmate fronds on long stalks; Azalea indica imbricata, a distinct variety with large white flowers flaked with red and perfectly double; Imantophyllum Thibetianum, very much like I. minutum, but with a neat habit; and Sempervivum Leggerii, a small species. Habrothamnus Newellii was exhibited by Mr. George Newell, gardener to E. M. Pratt, Esq., Byston Hall, Norfolk. It has dense clusters of dull crimson flowers, and gained a first-class certificate.

Messrs. Rolliason & Sons, Tooting, S.W., sent a box of Plantago major, with pale yellow variegation, and it is said to come true from seeds; Eriosa effusa, a garden hybrid between E. princeps and E. Marnockiana, it has dull red flowers which are not very striking; and Oncidium crispum var. magnificum.

Messrs. G. Jackman & Son, Woking, sent a group of double Clematis Rhenanensis, a variety with large bluish white flowers,

very double; *Venus Victor*, with lavender flowers, having well-shaped petals; *Duke of Connaught*, also with lavender flowers, but distinct in character. First-class certificates were awarded to them. Messrs. Harrison & Son, Leicester, sent some plants of *Mimulus moschatus* var. *Harrisonii*, a cross between the Musk *Mimulus* and a species with spotted flowers; it is musk-scented, and will be a great improvement on the old Musk of the London street-barrows. A first-class award was voted to it.

Messrs. Backhouse & Son, York, sent *Microlepis anthriscifolia*, a very beautiful South African Fern with creeping rhizomes, and the fronds finely divided like *Pteris scaberula*. Mr. Croucher, gardener to J. T. Peacock, Esq., Sudbury House, Hammersmith, sent *Boloinocactus cylindraceus*, a most curious species with long curved spikes, beautifully marked. This was well worth the highest award which was voted to it. *Agave panoplea* and *A. Garzanti*, two Californian species that have been recently introduced by Mr. Peacock, they are very handsome species.

A noble specimen of *Lilium Hansonii* was sent by G. F. Wilson, Esq., of Weybridge; it had three spikes with twenty-four flowers, but one only was open. *Gloxinia Criterion* and *G. Attraction*, two very fine varieties with upright flowers, were sent by Messrs. F. & B. Kinghorn of Richmond.

Mr. J. George, Putney Heath, sent two hybrid Ivy-leaved *Pelargoniums*. *Gem*, a variety with bluish flowers and very neat trusses, had a first-class certificate; *Progress* has bright rose-coloured flowers. *Begonia Prince of Orange* and *Bronze Queen* were sent by Mr. B. S. Williams of Upper Holloway. *Fancy Pelargonium Jack Jordan*, a fine dark-coloured flower, was sent by Mr. C. Turner of Slough. E. B. Foster, Esq., of Clewer Manor, Windsor, sent a group of the large-flowered variety, of which *Edith* was the best. *Sappho* has a very neat habit, and has bright red flowers.

Lobelia cerulea alba marmorata was sent by Mr. J. Chambers, Westlake Nursery, Spring Grove, Isleworth; it has very pretty mottled flowers. A very good strain of *Mimulus* was sent by Mr. R. Dean of Ealing; they are beautifully spotted and in great variety. The same exhibitor sent some grand spikes of a plant white Stock, which were highly commended by the Committee. O. Wrigley, Esq., Bridge Hall, Bury, Lancashire, had a vote of thanks for *Thunia* sp. and cut *Ixoras*.

NOTES AND GLEANINGS.

A MEETING of horticulturists was held at the rooms of the Royal Horticultural Society on Friday last to take steps to raise a memorial of the late M. Louis Van Houtte of Ghent. The chair was occupied by Dr. Hogg, and there were present Dr. Masters, Mr. H. J. Veitch, Mr. W. Bull, Mr. Silberrad, Mr. McCullum, &c.; and letters approving of the object were received from Mr. Moore, Mr. B. S. Williams, Mr. Andrew Henderson, Mr. Charles Turner, and others. It was resolved that a committee be formed to raise a subscription with the object of creating a fund to be vested in Trustees, the interest of which will be applied to giving a large gold medal or medals, to be called VAN HOUTTE MEDALS, at every quinquennial Horticultural Exhibition held in Ghent. The sum of nearly £50 was subscribed in the room, and a Committee, with power to add to its number, was formed, consisting of Dr. Hogg, Chairman; Dr. Masters, Treasurer; and Mr. Harry J. Veitch, Secretary. We cannot too strongly recommend this object to the attention of all British horticulturists, and to ask them to unite in doing honour to the memory of one who has done so much for horticulture. Those who knew him best honoured him the most while he lived. Let us honour his memory and keep it fresh in our own.

I FIND EARLY PARIS MARKET CABBAGE LETTUCE extremely useful for an early crop in the spring. Sown in a Potato frame in the end of February, and afterwards planted on a south border, it formed heads by the middle of May—earlier indeed this season than Bath Oos and Hardy Hammersmith sown the previous August. I confidently recommend it as the earliest Lettuce known. It is very agreeably flavoured, and tender even to the outside leaves. There is a very good drawing of it in the Messrs. Veitch's catalogue for the present year.—WM. TAYLOR.

THE EXHIBITION OF FLOWER BEDS which was announced to be held at the Royal Botanic Gardens, Regent's Park, on the occasion of the opening of the new wing of the conservatory last Thursday by His Serene Highness the Duke of Teck, G.C.B., fell through for want of support. The condition was that the plants should be plunged in beds on the lawn, and there remain for eight days—a condition impracticable, because nurserymen were not likely to look up their property at the time when alone it was in demand, and because gentlemen could not be expected to permit their best bedding plants to

be almost irretrievably injured by removals and packing. Besides, had these sacrifices been made, no beds, however well arranged, could have equalled the effects of beds in summer after the plants had attained their natural growth. Thanks to the taste and skill of the managers of the London parks and the Crystal Palace, "exhibitions of flower beds" are provided annually to all who choose to enjoy them, so that the failure of the recently-proposed novelty is of trifling import.

WE understand that on the occasion of the great Whitsuntide Show at Manchester Mr. Bruce Findlay was presented by a few friends in the neighbourhood of London, who have been in the habit of attending these Exhibitions, with a very chaste SILVER INKSTAND and a pair of SILVER CANDLESTICKS as a token of their kindly feelings. It was all done in a quiet and unostentatious manner, quite in accordance with Mr. Findlay's own character.

THE *Gardener* informs us that there is a small plant of *ODONTOGLOSSUM VEXILLARIUM* in bloom at Drumlanrig in a pot about the size of a breakfast cup, with sixteen blooms from one bulb, some of which flowers measure 3½ inches by 3 inches, and are of the most lovely rich glossy pink with a pure white centre and yellow pencilled eye, forming the most captivating object imaginable. Mr. Thomson states that cool Orchids require to be kept constantly moist at the root, and such as are in pots glazed outside thrive better than those that are in common porous pots.

WE regret having to record that on the 5th inst. died, aged eighty, at the Rectory House, Woodstock, Oxon, the Rev. GEORGE WILLIAM ST. JOHN, M.A., Rector of Bladon-sum-Woodstock.

At a meeting of the Edinburgh Botanical Society an interesting communication was read from the Rev. D. Landsborough, on experiments in growing several AUSTRALIAN PLANTS and TREES in Arran, in the Firth of Clyde, including among others the great Australian Tree Fern and other Tree Ferns, *Acacias*, and Gum Trees. The Blue Gum grew 11½ inches the first year, 4 feet the second, and 6 feet the third. The *Eucalyptus pendulosa* also grows well in sheltered situations along the west coast, and Mr. Landsborough expects to see it generally introduced in a few years, and form a valuable addition to our evergreen shrubs.

At a meeting of the Philadelphia Academy of Natural Sciences Mr. Thomas Meehan remarked that some bulbs of *LILIUM PARDALINUM* received last spring from Dr. W. P. Gibbons had the scales articulated in the middle. The upper portion of the jointed scale fell off easily at the slightest touch, giving the blunt ends of the remaining portion the appearance of grains of Indian Corn as they were arranged along the rhizome. Dr. H. N. Bolander has since informed him that it was a common characteristic of this species. It does not, however, appear to have been noticed by monographers of this genus. He had since found that the eastern *Lilium superbum* had the same character. It was, however, by no means regular. Some bulbs would have a large number of articulated scales, while others had but a few here and there; and they were as likely to be found among the inner as the outer scales. The scales of Lily bulbs were but the dilated and thickened bases of ordinary leaves. There were no articulations in the normal leaves, and it was difficult to trace any morphological relationship in these scale joints. Another observation he had made on the failure of some bulbs of *Lilium canadense* to produce seed. He had received a few years ago some bulbs of this species from Mississippi. The flowers proved so remarkably large and beautiful, much superior to those of the northern plant, that he was in hopes to increase it by seeds, but not one seed vessel formed, though a quantity of *L. superbum* growing near them set every flower. Supposing that this might be a case where fertilisation from other flowers might be a benefit, pollen was applied from others of the species, but all of the same Mississippi plants, with no better results. He wished to call particular attention to this fact, because he believed that physiological agencies in fertilisation and reproduction were often lost sight of in the discussions relating to the connection of flowers with insects in this matter.

KEEPING GRAPES.

I SEND for your inspection, and for the guidance of any who may not have adopted the bottling system of keeping Grapes, a few berries of old Lady Downe's, and a hint or two as to the mode adopted in keeping them. They were ripened by the

end of September last, out on the 18th of January, 1876, immediately bottled in clean water, the neck of the bottle caulked as usual with clay, and cut to-day. Can any other Grapes be kept as well? I think not. We have no specially-erected room for keeping Grapes, but store them in the fruit room having a grate, in which in winter we frequently have a fire, and sometimes gas burning all night to keep out frost.—**ERWIN CHILD, Gardener, Norris Green, West Derby, near Liverpool.**

[The Grapes were quite unshrivelled, full-flavoured, and with bloom upon them.—*Eds.*]

THWARTING HARES AND RABBITS.

MR. BAXTER SMITH has doubtless communicated a useful hint on protecting the bark of newly-planted trees from hares and rabbits by fastening round the stems of the trees virgin cork. This we are told is cheap, neat, and effectual. I can well believe it is effectual, and I know it is appropriate, and where only a few trees require to be protected its cost is not serious; but when, it may be, some hundreds of stems must be protected the virgin cork would become rather a serious item, especially when compared with an article of the same nature, and which answers the purpose equally well, and which in many places can almost be had for nothing. I mean by this that any sort of bark will answer the purpose of thwarting hares and rabbits as well as the bark of the Cork Tree.

I have used Larch bark extensively and successfully in protecting newly-planted fruit and forest trees in open spaces from sheep as well as from "ground game." The extra casing of bark will also protect the trees from beasts, but these animals commit greater injury by rubbing than by nibbling. To prevent this it is a good plan to drive into the ground a few short stakes, letting their tops (not pointed) be an inch or two above the ground; they will be hidden by the grass but found by the animals' feet, which will immediately "back out of it." A few rows of these stakes round and at a suitable distance from the tree will prevent its being rubbed by beasts. The stakes should be 5 or 6 inches apart.

But to return to the bark. Any kind of bark will do provided it is dead—that is, that it has been removed from the trees for a few months. Rabbits will not nibble dead trees nor juicy bark. I was led to the use of loose bark as a protector to trees by observing that while the bark of freshly planted trees was devoured by the vermin, the stakes which supported the said trees were never touched. I therefore enveloped the trees with loose Larch bark, and was gratified to find that the rabbits were completely baffled and the stems perfectly safe. More than twenty years' experience has convinced me that this is a cheap and perfect remedy against rabbits and sheep injuring the stems of trees.

I have been situated on an estate having large plantations, and where some tons of bark have been each year peeled for the tanners. It is not all who have trees to protect who are similarly situated; but if those who cannot obtain bark by other means will go to any large sawyard they will find loads of outer strips thrown away, and which the owner of the yard will be glad to have cleared away for next to nothing. These strips carefully tied round the stems of trees will afford them perfect protection against the inveterate, annoying, and injurious nibblings of rabbits and larger animals.—**A FORESTER.**

CYPRIPEDIUM PUBESCENS, OR DOWNY LADY'S SLIPPER.

Our figure represents one of a family of plants which to be described as charming is but a poor compliment to pay. No plants are held in higher estimation than our Lady's Slippers. We have to call it our own, but it is very seldom found in its native home. It has been said that many a lovely flower blooms unseen, and may not this be applied to our Lady's Slipper? It would appear that it inhabits homes away from the haunts of men, and few are the recorded localities where *Cypripedium Calceolus* flourishes in a wild state. This family contains some of the most beautiful plants that can grace our rockeries, and which are worthy of being included in our choicest collections of hardy herbaceous plants. If we were confined to an individual kind, that kind would be *Cypripedium spectabile*, for which we are indebted to North America, and is being successfully cultivated in many places in Britain. When once established it proves to be one of the finest objects of the garden.

Cypripediums are moisture-loving plants, requiring partial shade, but must not be planted in stagnant soils. Any amount of labour bestowed upon them will be more than compensated for by their curious and beautiful flowers. They delight in a compost of good fibrous loam, peat, coarse grit, and charcoal dust. Some of them may require a little deviation from the above compost, requiring leaf mould or well-decomposed vegetable matter. They are splendid objects for pot culture, and with care they can be made available for many purposes of decoration. In some situations out of doors it is advisable to cover the crowns with some kind of material to prevent the



Fig. 118.—*Cypripedium pubescens*.

water lodging about them during the winter. They should also be planted deeply. *C. guttatum* is of creeping habit, producing lovely white flowers. *C. acaule* is a very desirable variety. There are others of this charming family, but *C. spectabile* bears the palm. I have no knowledge of their being increased by seed; only by division, and that requires very careful manipulation, and is best done when growth is commencing in early spring. *C. pubescens* has yellow and purple flowers. It was introduced from North America in 1790.—**N.**

OMPHALODES VERNA.

NONE of the plants included in the order Boraginaceae—and it contains Forget-me-nots (*Myosotis*)—have so clear decided brilliant blue flowers as this. It commences flowering in March, weeks before the Wood Forget-me-not, and continues

up to May. Its flowers are produced in loose spikes, and when seen in a mass have nothing less than a beautiful effect. The growth is in a suitable position and soil very free, the plant sending out runners very extensively, extending a considerable distance in a season, and in that respect is good as a surface-covering plant. It appears to delight in a light open soil well drained, evidently preferring vegetable soil to any other. My plants are in light loamy soil top-dressed with leaf soil and a portion of short manure, for which the plants, by the free growth and ample bloom, appear grateful. It appears not only to require shade in summer, but also warmth, and not having seen it bloom other than sparsely in positions not inclining well to the south, with shelter to the north and east, as that of a bank, rock, or evergreen, with in summer shade afforded by deciduous shrubs, which, leafless in winter and spring, admit sun, and at the same time afford a kind of shelter. In any shaded nook or warm corner this plant will thrive in light sandy soil; and amongst deciduous shrubs or sunny banks, spreading itself far and wide amid the deposit of vegetable matter, it cannot fail to please all lovers of bright blue early flowers.—G. A.

CORNISH NOTES.

RHODODENDRONS.—I wish my experience could confirm the many testimonies given in your paper as to the hardihood and accommodating disposition of these plants. I have never been able to grow a creditable specimen without the aid of peat, and I have, moreover, taken some pains to ascertain how the case stands in several of the principal places of this county where these plants are cared for, and nowhere can I find the natural soil producing satisfactory plants unless it be a peat one. Where they have the rich black earth stripped from the old granite hills and sparkling with sharp granules of the decomposed rock they look happy, but otherwise very inclined to "strike."

The following list of good kinds will not add much to the information already given, but some of the names have not as yet I believe appeared in your pages:—*Blandyanum*, *Brayanum*, *Ciliatum*, *Atrosanguineum*, *Angustus*, *Curricanum*, *Hendersonii*, *Everestianum*, *Lady Eleanor Cathcart*, *Madame Masson*, *Minnie*, *John Waterer*, *Mrs. John Waterer*, *Nero*, *Roseum grandiflorum*, *Titian*, *Vandyke*, *Victoria*, *Nobleanum*, *The Indians*, *Falconeri*, *Barbatum*, and seedlings from them crossed with *Thomsonii* are also growing well, but have not as yet flowered with me. These latter—coming as they do from the stock of a gentleman who in his lifetime, assisted by Dr. Hooker, succeeded in establishing one of the most interesting collections of *Rhododendrons* in England—I have great hopes of. If they never flower they would be worth growing for the tropical beauty of their foliage; but in spite of the necessity of peat and its expense in many cases few lovers of flowers can well abstain from growing *Rhododendrons*. Is there any chance of propagating them without peat?

One of my most pleasant pilgrimages is an annual one, early in May, to "Penjerriek," to see a fine specimen of *Thomsonii* blooming in the open ground there. This lovely plant, and the *Embothrium coccineum*, a tree some 25 feet high, with its thousand blooms of rich coral-coloured Honey-suckle-shaped flowers, to say nothing of the many other rare and beautiful objects in this uniquely pretty place, well repay a visit.

The *Embothrium coccineum* I cannot find in any of the nurserymen's lists. The two specimens in this county—the one I have referred to, and a larger one growing in the grounds of Scorrier House—are said to be the only specimens known save a small plant or two struck from these parent trees. Can any of your readers give any information about this tree? It must surely be more wide-spread than is alleged. That at Scorrier is probably 30 feet high, and is at present estimated to be covered with at least three thousand blooms.

GLADIOLI.—Not being satisfied with the constitutions of my *Gladioli* I tried last winter the somewhat Spartan plan of leaving them in the ground, and I have been agreeably surprised at the result. The losses are fewer than when I stored them, and the swords, now well up, are certainly more vigorous. A neighbour of mine took his up in November, gave each bulb (some two hundred) a pot, filled the pot with sand, and wintered them in a cold frame. He tells me the spawn he has turns out more than three thousand, and the bulbs are much fuller and firmer than when he stored them on the old plan. I think the secret of having a vigorous stock is, if possible, to

keep the bulb always growing. I cannot think the dead-alive plan of storing them dry is other than injurious.

PRÆFRUMS.—Last year and before I have been much dissatisfied with these. Some four years ago I saw them shown at South Kensington, and I thought they deserved greater popularity. This year my established plants—named kinds from Messrs. Kelway, such as *Princess Beatrice*, Mr. Gladstone, *Uzzial*, *Gustave Hertz*, and others—are really lovely. The dry wind and bright sun seem to suit them exactly; the blooms are wonderfully compact, and many of them measure more than 8 inches in diameter, and the colours are striking. I shall certainly multiply them.

The spring ribboning I have used this year has been more effective than I have ever succeeded with before—*Variegated Aubrietia*, *Myosotis dissitiflora*, *Cheiranthus Marshallii*, and *Silene pendula*. The bright orange of *Cheiranthus* with the choice blue of the *Myosotis* is very telling.

PEARNS.—One wonders more is not written about them. The massive rich ruby flowers of the old-fashioned kinds now blazing away amongst my shrubs I could ill dispense with. Will someone who has made a speciality of these flowers tell us something about them? I have some good light lemon-coloured French kinds that are pretty.

PAIRS.—The early Pears set well. The later Pears will be a wretched crop. The long continuance of north-easterly winds and the frost during this moon have played great havoc. Apples promise a fine yield. I was glad to see "*WILKINSON RACON*" doing justice to the Hawthornden. It is handsome, useful, and hardy, as far as my experience goes. Some years ago, when going over the collection of a fine old fruit-grower, he pointed to this Apple and said, "When I was in the service of Lord Poltmore the famous Boyer was cook there, and his instructions always were, 'Bring dem Hawthorndens in for de sauce.' In his opinion there was no Apple for 'de sauce' equal to them." Reading "*WILKINSON RACON*'s" happy description of this Apple, although not quite so good as eating it, was uncommonly like the process. I quite agree with him in the wish for a list of dessert and cooking Apples found to answer best in the several districts throughout England, upon the same plan as the election of Roses. It would wonderfully help beginners, I am sure. I know from experience what pleasure a piece of orchard ground can afford, and that pleasure will generally be, if not in a direct ratio to the real value or otherwise of the fruit produced, still considerably influenced by it. In spite of the high repute of our special Cornish Apple the *Gilliflower*, it is most difficult to grow and ripen it satisfactorily out of a favoured district or two. In some of the sheltered places on the river Fal, especially in the district where our well-known horticultural authority the Hon. and Rev. J. T. Boscawen lives, it is found at its best, and is then matchless; but ordinarily it fails to ripen, keeps badly, and then its leathery toughness is a match for the stomach of an ostrich. The Ribston Pippin cankers. Cox's Orange Pippin I should venture to head a list with; it bears well, is healthy, and the flavour I think preferable to the Ribston. The Blenheim Pippin, the Pearmain (Herefordshire, Green, Scarlet, and Golden), Margil, and some other standard sorts, with Winter Peach, the Junnettings, &c., as summer kinds would soon make a safe catalogue of dessert sorts. For kitchen purposes Hawthornden, Lord Suffield, Blenheim Orange, Cellini, Alfriston, Keswick Codlin, with a few others it is impossible to go wrong with. This is of course a rough way of putting it. My object is to strengthen the suggestion of "*WILKINSON RACON*" and others who have mooted the fruit-election list. What lovers of horticulture want as data to work upon is not isolated cases of success and failure here and there, nor an individual opinion here and there, but a systematic wide-spread comparison, such as this project would embrace. Then, too, a comparison might be instituted of the relative value of the different forms of growth for the different leading sorts—whether dwarf, pyramidal, trellis, or the old-fashioned orchard form best suited them.—**CORNUBIA.**

GLOXINIA CULTURE.

THIS plant by regulating its resting period may be brought to bloom at almost any time. I generally keep the plants while resting under the greenhouse stand or late vinery, or any place convenient where the temperature is between 45° and 55°; if it is much lower they are apt to decay; if higher they start into growth.

When stowed away the pots should be laid on their sides, as

it prevents drip getting at the plants. Before potting, if not started, they should be put in the stove or Cucumber or Melon pit, where the heat is between 60° and 80°, just to start them; then pot them in good fibrous loam, turfy peat, and half-decayed leaf mould in equal parts, with a due proportion of good sharp river sand and a little charcoal or powdered sea shells run through a three-quarter-inch sieve. Drain well with a little moss on the crooks, as it keeps the drainage permanently open; then place the plants in a good moist heat, as near the glass as possible. While growing keep them regularly watered, but never very wet. The *Gloxinia* always requires slight shading, as by painting the glass inside with milk and whitewash; by so doing the foliage is preserved beautifully green.

Give the plants a second shift if you find they require it. They should never be syringed, as the leaves are so woolly they hold moisture too long, which causes them to damp off.

Treated in this way they will remain in bloom a long time, and when done blooming gradually dry them off.—E. U.

THORESBY,

THE RESIDENCE OF EARL MANVERS.

THIS is well known as being one of the most princely of country mansions. It is situated in a magnificent park ten miles in circumference, and containing about five thousand acres of land. It is well stocked with deer and Scotch bullocks, and studded with trees of all sorts; Oaks that have defied the storm of many a winter, lofty Beeches, and venerable Thorns clad in Mistletoe abound on every hand. The Heather, Bracken, and golden Gorse were alive with squirrels and rabbits, and resounded with the songs of the woodland choir. On the north side the park joins the Duke of Newcastle's estates at Clumber, while the west abuts on the picturesque village of Budley. This village has a very rural appearance, most of the houses being built in the Gothic or Swiss style, and is situated under a thickly wooded acclivity. Earl Manvers is the sole proprietor of the village, and it is looked upon as a very model of village comfort and beauty; and in truth it deserves such a distinction. The cottages are all surrounded with neat and productive gardens, which combine to maintain the village in all its simple beauty. The river Meden runs on the south side of the village, and also crosses the park. Half a mile west of the mansion it swells out into a broad and spacious lake more than a mile in length. Swans, waterfowl, and large fish are abundant, also pleasure boats, and one full-rigged ship. The Hall has been finished about three years, and is in the modern Elizabethan style of architecture. It is built of the celebrated Mansfield, Woodhouse, and Steeley magnesian limestone, and presents a noble exterior. The site is well chosen—on a gentle rise of ground near the rocky, and commanding very pleasant prospects from the terraces and Hall windows. The old Hall, which was built by the late Duke of Kingston, has been taken down. It was celebrated as the birthplace of Lady Mary Wortley Montague, whose writings are of world-wide fame.

The carriage entrance is on the east front through massive gates into a spacious courtyard. Ascending a flight of steps we reach the terrace on the south side of the mansion. It is a broad gravel promenade 160 yards long and 60 yards wide. It is surrounded by a low balustrading, and affords a most charming prospect of the surrounding landscape. I must notice two beds of flowers on this terrace that are worthy of a passing remark. They are opposite two recesses, and are uniform in size. They are about 50 feet long and 18 feet wide, and surrounded by a massive stone curbing. The first bed had next the stonework a broad band of Ivy, second a row of Golden Feather, third a broad band of white Daisies, fourth *Aubrietia deltoidea*, fifth Forget-me-not, and the centre Wall-flowers mixed. The second bed had *Euonymus radicans* for the outside row, second *Aubrietia*, third Golden Thyme, fourth a bright-coloured Pansy, the centre dwarf dark Wall-flowers. The second terrace is reached by four flights of stone steps, and is 120 yards long and 45 yards wide. Many of the beds are permanently planted with dwarf shrubs, and several edged with *Daphne cneorum* were in beautiful bloom and very fragrant. There is another terrace, but not quite so large as the two preceding, with a large fountain in the centre, and surrounded with a corresponding breadth of grass. On the west side of the Hall, and on a level with the upper terrace, there is a beautiful flower garden, the beds out out in the turf, and at the time of my visit (May 17th) they were all ablaze

with spring flowers. These beds are seen from the principal drawing-room windows, and Mr. Henderson had displayed great taste in the arranging and blending of the different colours. The accompanying plan will give an accurate idea of the manner in which the different beds are planted.

Leaving the flower garden in a westerly direction we observe that a large piece of the park has been fenced-in and formed into shrubberies and pleasure grounds. Many of the shrub have not been planted more than twelve months, yet they appear as vigorous and healthy as if they had occupied the same position for many years. Mr. Jamieson, the wood-manager at Thoresby, has under his care extensive nurseries in which he raises Conifers and evergreens in large quantities, and this renders it an easy matter to plant several acres of shrubberies.

The pleasure grounds that were connected with the old Hall are still retained and kept in fine condition, though they are several hundred yards from the present mansion. As we pass along the various walks splendid vistas open, and instead of being in a private nobleman's pleasure grounds we might fancy ourselves transplanted into some oriental forest. A broad sweep of grass is dotted here and there with choice evergreens that extend to the narrow lake, which receives its supply from the large lake above. Following a walk that leads to the right, embosomed amidst many-tinted foliage, there is a rushing cascade, crossed by a light and elegant bridge, and what otherwise might have been merely a plain tame run of water is now rendered picturesque and beautiful, for the water is made

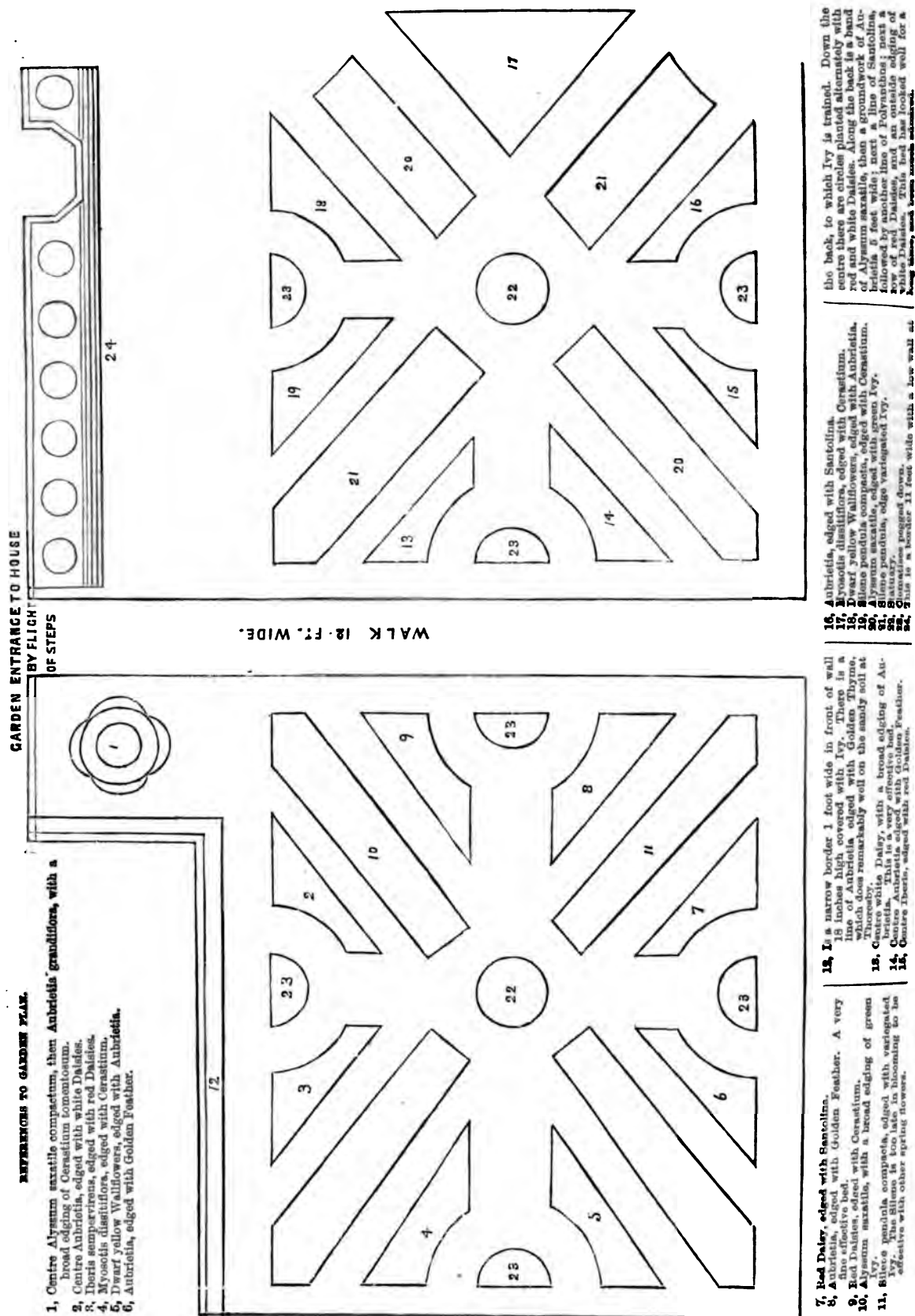
"To ripple and shine
With the glory and dash of a miniature Rhine."

In the distance we catch a glimpse of the Chestnut avenue, an unbroken vista a mile in length. Fine timber trees are observable on every hand, venerable Oaks that probably have weathered the storms of a thousand winters, and had their existence when the park formed a part of Sherwood Forest; Fern-leaved Beeches, and some fine samples of the Pine tribe.

We now cross the park on our way to the kitchen gardens, and here neatness and good order predominate. The space enclosed within the walls is five acres and a half, and the outside borders and orchard are about eight acres and a half. Before we enter the interior we will take a walk round outside the walls. There is a border running round, 12 feet wide, cropped with early Peas, Potatoes, and dwarf vegetables generally. The south wall is planted with Apricots from the west corner to the centre, and the other half with Plums, Cherries, and Pears. The walls with east and west aspect are each covered with Pears. I may here remark that these gardens were formed and the walls built about fourteen years ago, so that all the fruit trees are in the "prime of life." When the trees were planted riders and dwarfs were planted alternately, and as the dwarfs have advanced in growth and monopolised the wall the riders have been cut away to give place to them. All the trees were in vigorous health, and every branch trained as straight as a rifle barrel. The borders for all the wall trees are properly drained with rough stones, brickbats, &c., and the compost prepared with as much care as if it had been for Vine borders. The walls are covered with a trellis of galvanised iron wire. The wires are fixed horizontally about 4½ inches apart, and are passed through holdfasts projecting about three-quarters of an inch, so that the wires are about half an inch from the wall. The wires pass through iron plates at each end of the wall, through which they can be strained from each end. The plates are made quite firm to the wall, and to maintain the wires equidistant the holdfasts are about 4 feet from each other. The appearance is neat, and the trees have done well against the trellis, nor is the wall damaged by maling. Mr. Henderson in the first place made his arrangements on a grand and liberal scale, and what he has done in this respect in the way of fruit culture he has done well, and he is now reaping his reward in an abundant supply of fine fruits.

The whole are belted with a broad irregular border of the choicest shrubs, including many rare and beautiful Conifers, such as *Araucarias*, *Thuja borealis*, *T. dolabrata*, *Cedrus deodara*, *C. argentea*, *C. Libani*, *Cupressus Lawsoniana*, *C. macrocarpa*, *Thuja gigantea*, *Picea Nordmanniana*, *P. nobilis*, *Junipers* of sorts, *Wellingtonia gigantea*, variegated and common Yews, &c.

Entering the kitchen garden we find the walls all clothed with fruit trees, including Pears, Cherries, Plums, and a few Gooseberries and Currants on the north wall, which can be protected with very little trouble from the depredations of birds, and are useful in a large establishment like Thoresby,



where the demand on the gardens is considerable. The gardens fall with a gentle slope to the south, and the glass houses are erected on a terrace on the upper portion of the garden, which is 80 feet wide. The terrace is separated from the other part of the garden by a grass slope 5 or 6 feet deep, and the ascent and descent is by several flights of steps in different positions.

Starting from the central gates I observed two beds down each side of the centre walk, 12 feet wide and 400 feet long. These beds are filled with standard Roses, the tallest at the back, and falling with a regular gradation to the front. Mignonette is sown to cover the bare ground, and during the summer season Mr. Henderson finds these borders very useful to supply cut flowers. Passing to the top of the walk there is another border 12 feet wide, which runs nearly the whole length of the garden, and is 560 feet long. The border is on the lower side

of the walk, and on the opposite side there is the grass slope which forms the dividing line between the terrace and the other part of the garden. This border is also filled with Roses the same as the last named, which in the season of bloom must produce a grand effect. Beyond the beds of Roses there is a row of espalier Pear trees about 5 feet high, trained to a neat framework of iron, which entirely excluded the view of the plots of Cabbages, Cauliflowers, &c., beyond; for however beautiful beds of Roses and other flowers may be by the side of kitchen-garden walks, the effect is entirely destroyed when placed in close proximity to the common vegetable flats. Mr. Henderson is successful in producing fine crops of succulent vegetables; and a bed of triple-curbed Paraley 200 feet long and 10 feet wide, every plant as perfect as if it had been turned out of a mould, was a sight that few of us have the pleasure of often seeing.

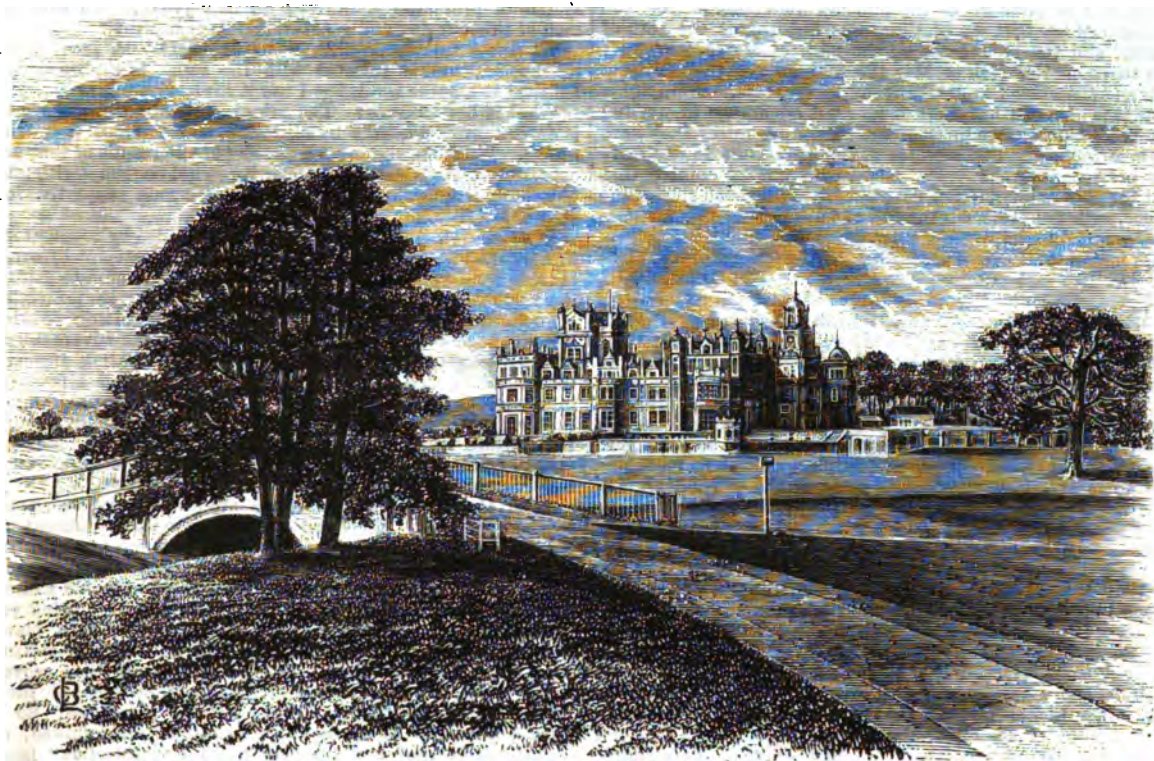


Fig. 120.—THORPE PARK.

The ranges of glass houses are on the upper terrace, as before stated. There is a range of lean-to's the length of the garden and another range in front, all span-roofed. Starting from the east end of the back range we will take the houses as we passed through them. The first is a Peach house 124 feet long, with the trees trained to the back wall and a trellis in front. Hale's Early Peach is considered the best early Peach grown; and there are young trees of Dr. Hogg Peach and Lord Napier Nectarine. The second is a Peach house 45 feet by 18, the trees planted in two sets, and the fruit was nearly ripe. The third house is a vinery 45 feet by 18, containing a set of young Vines in excellent health. The fourth house is a vinery the same size as the last, with the fruit just colouring, and containing some fine bunches of Duke of Buccleuch, Foster's Seedling, and Madresfield Court Black Muscat. The fifth house is the conservatory. It is 45 feet by 25. In the centre there is a large bed with Camellias planted out, also a few Nerium Oleanders. Benches are arranged round the house, and these were well furnished with plants in bloom. The sixth house is a newly-planted vinery 45 feet by 18. The seventh house is a late vinery containing some fine Vines of Raisin de Oslabre, Lady Downe's, and Black Alicante. The eighth is a Peach house 45 feet by 18, the trees planted in two sets, and besides Royal George and other popular sorts I noticed one called Stump the World. Both the Peach houses and vinerias were all well stocked with

Strawberries in pots, of which sixteen or eighteen hundred are forced each season. The sorts found the most useful for forcing are President, Keens' Seedling, and Marguerite. The last house in the range is a newly planted vinery, corresponding in size and appearance with the first Peach house in the range; it is 124 feet long and 18 feet wide, and contains thirty-nine Vines planted at the front, and trained near the glass in the usual way, and about the same number on the back wall. If my memory serves me right this was the second season that they had been planted, and they were distinguishable for vigour and healthy foliage. Glancing along the labels I noticed the following sorts in particular:—Venn's Black Muscat, Golden Queen, a Vine of great promise; Chavouah Barbarossa, Alicante, Duke of Buccleuch, Burchardt's Prince, West's St. Peter's, Waltham Seedling, very disappointing so far; Sealiffe Black, Gros Colman, Lady Downe's, and Muscat of Alexandria.

The next range comprises eight spacious span-roofed houses devoted to the growth of Figs, Pines, pot Vines, Melons, and Cucumbers. The first is 80 feet by 20, and devoted to Figs, the trees all in luxuriant health and carrying a heavy crop. There are many varieties cultivated, and Mr. Henderson considered Adam a useful early sort, which never drops its fruit. Second house 80 feet by 20, is a vinery, the Vines planted in a bed in the centre of the house; the Vines run-up to the apex, and are then trained down each side the roof.

I noticed some pot Vines that had been raised from eyes at Thoresby carrying splendid crops; one, Foster's Seedling in particular, had thirteen fine bunches. The third house in the range is 25 feet by 18, with a path down the centre and a bed on each side. It contains two sets of pot Vines. The one on the south side was introduced on the 8th of November, the pots plunged in a bed of Oak leaves, the Vines tied-down horizontally to insure their breaking regularly, and started in a temperature of 55°, with the usual attention to syringing, damping, &c. These Vines not having been forced before were very reluctant to arouse themselves from their wintry sleep, but on the 21st of January the bunches were fully developed. On that date the second set of Vines were introduced on to the north side of the house, they being of the same age, strength, &c., of those introduced in November. These were plunged in leaves the same as the first lot, and of course subjected to the same temperature. They broke away freely, and in three weeks the bunches were observable. The thinning of the first set of Vines was finished on the 16th of March, and the second set on the 25th of March. When I was there on the 17th of May the first lot was just ready to cut, and the second would be ready in ten days. From these facts it is obvious that there is no great advantage in starting pot Vines before Christmas or the new year, unless they have been forced early the previous season and gone to rest early the previous summer. Mr. Henderson was of opinion that had the second lot of Vines been placed on the south side of the house, with the same advantages of sunshine as the first lot, they would not have been even ten days behind the others. The fourth house is 25 feet by 18, and devoted to Vines planted late last autumn. The fifth house is 40 feet by 18, and contained fruiting Pines in various stages of growth. Charlotte Rothschild was very fine, and it is only justice to Mr. Henderson to state that a finer lot of Pines it would be difficult to find. Every plant is in perfect health, and to say the leaves are thick and leathery would be using a common phrase, for they have more the appearance of ordinary Aloes or Agaves. The next house is the same size as the previous one, and devoted to successional Pines to come into use in the autumn. They are in fine condition, and bear the same traces of superior culture as the previous house. The seventh house is 25 feet by 18, with a path down the centre. The south side was planted with Melons, and the north side with Cucumbers. There was a fine crop of Melons in various stages of growth; some were nearly ripe, and others the size of a hen's egg. Mr. Henderson's method is to plant them 14 inches apart. Every other plant is stopped when it is about 4 feet high, and the other plants are allowed to reach the top of the house before stopping is resorted to. The result is, that those stopped first at once threw-out their fruiting laterals, and being impregnated the fruit swells off at once. The other plants have all the laterals taken off 4 feet high and stopped at the top of the house. These plants will not show fruit before the others are half grown. This simple system prolongs the fruiting on the same bed for some weeks, and Mr. Henderson is of opinion that a more regular and finer crop of fruit is obtained. The last house in the range is 25 feet by 18, and planted with Melons on each side for late use.

On the back of the kitchen gardens there is another block of useful span-roofed houses, also long ranges of pits and frames. The latter were filled to overflowing with tens of thousands of bedding plants of every conceivable shape, colour, and size. One house 52 feet long contained a miscellaneous collection of Palms and other fine-foliated plants. Another house 70 feet long was full to overflowing with fine-foliated Begonias, Ferns for dinner-table decoration, good plants of Pandanus Veitchii, P. utilis, good specimens of Orotans, Alocasias, and a fine plant of Clerodendron Balfourii. In turf pits I noticed many hundreds of Pansies, used for the embellishment of the summer flower garden. There was a fine stock of one known as Cloth of Gold, or Henderson's Golden Bedder; it was just like a sheet of gold seen in the distance. It is a fine deep yellow self; very good substance and habit, comes into bloom early, and produces a glowing mass of colour. Where yellow Calceolarias fail, and there is not glass accommodation for protecting yellow-foliated Geraniums, these yellow Pansies fill up a gap that no other plants can supply. A Viola, The Tory, also promised to be useful in the flower garden. The colour was pale indigo-blue, the flower of fine form, and appeared a free bloomer. Others I noticed in the trial ground, such as Duke of Edinburgh, dark blue; Lady Susan, yellow; and Purpurea, dark purple.

The gardener's cottage is situated in the inside of the kitchen garden on the east end of the terrace before alluded to, parallel with the ranges of houses, and commanding a fine view of the kitchen garden and the splendid bed of Roses that skirts the long gravel walks. The walls are mantled with Magnolia Lenne, Jasmines, and Roses.—Q. R.

SHOWS AND SHOWING.

"SPIRIT," "enterprise," "go-aheadness" are talismanic words. They possess a charm and an influence which seem quite irresistible. They are not only supposed to carry all before them, but are made to apply to almost every undertaking commercial or scientific. Technical, financial, moral undertakings, all must be entered on with "spirit"—the spirit of rivalry—jealous rivalry. An antagonism of forces—a clashing of energies—an electioneering, overbidding, march-stealing system of procedure would seem to be pervading the sons of men of this our day and generation. Is it healthy?

What has this to do with "our Journal?" A great deal, for horticulture is infested with the same fast propensity. Infested is a queer word, but I use it advisedly.

What is horticulture? The art of cultivating gardens. It is as well, even if a trifle humiliating, to reproduce that definition. What are shows? Examples of the results of that art ostensibly established to improve it. That is the legitimate object of exhibitions; but are they as a rule supported for that object?

Is not showing becoming a trade and regarded by competitors as a means of making money? Are not "societies," by overbidding each other for "popular" support, animated by selfish motives rather than basing their action on the higher principles of promoting art? Is the primary object of competing societies and rival agencies a policy of self-interest or the advancement of horticulture? Are there not suspicions floating through the minds of men that our craft, its charms and attracting influences, is being used as a peg whereon to hang a programme that will "draw" and will "pay?" To speak plainly, is not horticulture being degraded to profitable purposes, and the skill of gardeners measured by their power of drawing cash into "societies' " coffers and shareholders' pockets?

Look at the programmes which are being sown broadcast in city and town. They stake their very existence almost on the chance of their fixture being a fine day. They have no reserve fund—cannot afford one, and, what is more, cannot safely exist without one. To how many societies would a rainy day bring ruin, or at any rate induce a position requiring extreme efforts to rescue it from bankruptcy? How many societies have fallen and exhibitions ceased to exist by raking their all on the chances of a fine day and the day has proved rainy? They had no guarantee fund, they pledged their income before receiving it, and the end was a collapse. So it must continue to be if the above conditions are followed, as unfortunately they would appear to be by "societies" large and small.

Now-a-days a great show must be produced, large prizes must be offered, tempting conditions promulgated, attractive baits spread? What is the great underlying motive of the promoters? Is it a pure unsophisticated endeavour to advance horticulture, or is the object to overbid a rival and to "draw" the public? Formerly shows were regarded as marking epochs of horticultural progress, but now I fear that they are mere money traps.

Is not showing being overdone—the hobby-horse being ridden too fast—the mania approaching a surfait? Yes, shows are becoming too common, and soon gentlemen will be (many are) tiring of them, and the position of gardeners will not be permanently improved by longing for and catching at the baits which are being dangled before them. When shows are so numerous one is but the counterpart of another. I now allude to the London shows. A regular visitor to these not only knows almost to a certainty who will win the respective prizes, but what the plants will be which compose the groups. There is a sameness if not a tameness in these shows which palls on the appetite. There are, in fact, too many of them, and they spoil each other. How tired the reporters must be of repeating themselves! I should like to hear what they think about this subject, for I should imagine that few can form a better opinion of "shows and showing" than these gentlemen.

In my opinion we—that is, gardeners, look too much at the money part of the question. But then, unlike the agriculturists, we cannot afford to show for honour alone. It is all

very well to say, "Study horticulture;" but it is human nature to "look at home." The promoters of shows know this, and appeal to human nature. "Discriminate," do some urge? Well, we do discriminate. We cannot show everywhere, so we show where we are likely to obtain the best returns. It is simply a matter of business, and the advancement of horticulture has very small weight in our deliberations.

I greatly fear that showing is degenerating into a mere trade for making money. I do not mean a trade by exhibitors so much as by the promoters of exhibitions. It is the tempters rather than the tempted who are overdoing exhibiting; but it is more likely than not that the almost reckless rivalry will in the end not be profitable. Exhibitions are losing the charm of novelty—they are becoming too common to allure visitors. We want fewer shows and better. There is a too great dividing of power and a diluting of resources to make shows of really great magnitude and worthy of this nation, which, in spite of the glowing eulogies bestowed on Belgium, is, I believe, the greatest horticultural nation under the sun. Time is frittered, plants are jeopardised, and, if money is made on one hand it is wasted on the other.

Two-day Rose shows have latterly received a rebuff, and not before needed. A one-day Rose show is truly a regal sight—the flower in all its beauty is then seen; but the second day the same flower is ragged, tattered, jaded, and forlorn, and few are enamoured with the faded petals, and fewer still are induced to become possessors of the flowers which are supposed to be of so transient a nature.

It is time to speak plainly on the matter of exhibiting. There is enough—too much—grumbling in private. "Too many shows" has become a hackneyed phrase. To enjoy shows we require longer intervening pauses—rests, changes.—A RADICAL-CONSERVATIVE.

ASPECTS OF NATURE.

MAY.

"Now the bright morning star, day's harbinger,
Comes dancing from the east, and leads with her
The flow'ry May, who from his green lap throws
The yellow Cowslip and the pale Primrose."

LIKE other capricious beauties May is very often unworthy of the lavish praise bestowed upon her. Fickle April's smiles and tears have become proverbial, but of late May's constancy has been unkindness, for it has given us a wind so cutting that we might indeed believe that it came "brushed from Russian wilds." This season May has not realised many of the charms so abundantly ascribed to her by the earlier poets; nor can we fancy that the present aspect of the season is entirely due to the new style, which places the first day of the month twelve days earlier than by the old calendar. We have heard it said that the seasons are gradually growing later. However this may be, certain it is that the panegyrics bestowed upon the month are not always deserved. Yet in spite of rough winds that, "dry blowing, breathe untimely frost;" in spite of clammy mildew and the hosts upon hosts of destructive insects which sweep

"Keen in the poisoned breeze, and wasteful east
Through bud and bark into the blackened core."

May is still beautiful, still a month of flowers, still the milk month so eagerly hailed by our Saxon ancestors, still the month when pleasure is a duty.

The Primroses which came in March and lingered with us through April have almost disappeared. The Cowslip reigns in the meadows instead, and the beautiful proudly erect Oxlip may generally be found in close proximity to it; but while the former plant droops its heavy honey-laden head, the handsome Oxlip perks up its bolder blossom to the sun and challenges the admiration of every passer-by.

The Cowslip is not only prized by housewives, who concoct a dainty pudding and sweet wine from its fragrant flowers, but it is also said to be so beloved of that entrancing songster of the grove the nightingale, that when he arrives he makes his home in its vicinity, and never quits the spot until cold weather drives him again to summer climes to cheer others with his "pure strains of unpremeditated art."

Shakespeare has said of the 1st of May that

"All the budding girls and boys this day
Are up betimes and gone to fetch in May."

But at such an early season few of its pearly blossoms scent the air. At the end of the month our hedgerows indeed show a wealth of bloom, which loads the surrounding atmosphere with perfume and charms the senses into a perfect enjoyment

of our English spring, which is unequalled for its freshness and gradual development, and which like a froward girl pleases with its beauty, and only wins us to greater admiration of its smiles by their rarity and fickleness. May and its blossoms have furnished almost countless similes for maidens' loveliness.

"The delicate May,
With her slight fingers full of leaves and flowers,"

is indeed an impersonation truthful in the extreme, but they are not the pampered pets of the parterre. The flowers of May are found in the greatest abundance in neglected spots where the wayward wind has carried the seeds of last year's flowers. On common and hedgerow, at the sides of fields, they bloom in free uncultured profusion. Among them the most conspicuous are Lady's Smock, from the number of its star-like blossoms; and the wild Geraniums, white and pink, as well as their lesser but still more beautiful congener the Herb Robert, which deserves a prettier designation than its common one of Stinking Cranesbill.

The azure flowers of the Germander Speedwell cover many a bank and patch of ground, and look on bright days like the brilliant reflection of heaven's own blue, or peep in cloudy weather from their leaves like the "angels' eyes" to which the Devonshire folks have so poetically likened them. The beautiful wild Hyacinths carpet the woods, and the waving Ferns bend in graceful homage to their loveliness. The wild Strawberry is in blossom, but amid her taller compeers of hedge and bank we scarcely notice her little white cup, which children refrain from plucking in anticipation of the sweet miniature berries they hope to gather some weeks hence.

The wild Rose is rich in foliage, but as yet its delicate buds are clothed with their outer garment of green; yet their roseate pink is seen only here and there. June is pre-eminently the month of Roses. These flowers are all well known to fame. They are indeed household words, in the cottage as in the palace; but a ramble in bye lanes and unfrequented places shows us blossoms whose very names are unknown save to the ardent lover of Nature who has time to seek, distinguish, and classify them. The unlettered peasant calls them "posies," and the horticulturist stigmatises them as weeds, but they are sweet flowers nevertheless—Flora's wildings, as wonderful in their beauty, as marvellous in their existence as the most highly cultivated exotic or the most gigantic tree of the primeval forest.

Among the less appreciated handsome plants are the Blind Nettles, which—white, pink, and yellow—display their flowers in rings beneath their pale green leaves. The Star of Bethlehem shines in sequestered nooks, but its pretty blooms are seldom gathered, for the bruised leaves and stems emit such a strong odour of garlic. Solomon's Seal has met with so much favour that it has become a garden plant, and is getting rare in wild places.

During this flowery season the river side, the brinks of pools, and marshy places are not less beautiful with bloom and foliage than the field and copse. The *Myosotis palustris* under its popular name of Forget-me-not is known over Europe, and its poetical appellation has furnished legends for the folk-lore of every land. Towering far above the turquoise blue of the *Myosotis* the lovely yellow Iris keeps guard, so to speak, at the river side, its pointed lance-like leaves standing clearly out from the surrounding diversified aquatic foliage, only yielding in stateliness and height to the Bullrush and giant Reeds. The honey-laden flowers no sooner bloom than with their opening buds we find whole hosts of insect life. The burly brown cockchafer, for whom no one appears to have a complimentary word, blunders against the wayfarer in his evening walk; and the keen-eyed dragon fly may be seen flitting about in pursuit of his prey, appearing like the detached petals of some brilliant flower borne on the gentle wind. The drowsy hum of bees is heard on every side, and this is the month when they swarm and form new colonies to furnish man with their delicious highly-prized stores of honey.

The fresh green shoots of the young corn wave like silken ribbons in the breeze, and give the appearance of a verdant plain to the greater part of the island. The tender green of the Wheat is overshadowed by the rapidly thickening foliage of the trees, which stand around the fields like giant sentinels. Among these the sturdy Oak puts on his summer dress more slowly than the rest, and only at the end of the month does he condescend to develop the full green of his leaves, which until then have kept their own lovely tint of rich warm brown. As the shadows cast by his thickening foliage grow stronger, the Honeysuckle and wild Rose which so often encircle his

hoary trunk with their supple twining branches will begin to flower, and find a welcome shade for their delicate blooms beneath his wide-spread sheltering arms.

The birds sing. The ecstatic nightingale, who makes the night melodious with his song, has a rival in the skylark, that bright spirit whose melody has inspired Shelley's most magnificent ode and been the theme of a Shakespeare.

"Hark! hark! The lark at heaven's gate sings,
And Phoebus 'gins arise
His steeds to water at whose springs
On chaliced flowers that lie."

Wordsworth apostrophises the lark in a more serious spirit—

"Leave to the nightingale the shady wood;
A privacy of glorious light is thine,
Whence thou dost pour upon the world a flood
Of harmony with rapture more divine:
Type of the wise, who soar but never roam,
True to the kindred points of heaven and home."

Thus in May we have indeed the fulness of young life. It is above all months the month of promise, when untrammelled Nature spreads her beauties to the sun, and man having sown the seed looks hopefully forward to a plentiful harvest.

"Be gracious, Heaven! for now laborious man
Has done his part. Ye fostering breezes blow;
Ye softening dews, ye tender showers descend;
And temper all, thou world-reviving sun,
Into the perfect year."

—T. S. J.

BATH AND WEST OF ENGLAND SOCIETY'S SHOW AT HEREFORD.

THE horticultural tent is again under the stewardship of the Hon. and Rev. J. T. Boscawen, whose great experience in the direction of these exhibitions has secured to them a reputation which is unique in horticultural shows; but, unfortunately, in consequence of a delay on the railway some of the most important plants had not arrived on the day of the opening, consequently the horticultural tent was not open to the public till Tuesday.

Among the contributors were Mr. Paton, gardener to Sir Henry Stanhope; Mr. Bye, gardener to J. H. Arkwright, Esq.; Mr. Nash, gardener to J. E. Ranken, Esq.; Mr. Carmichael, gardener to Henry Tugwell, Esq., of Crowe Hall, Bath; Mr. Digswell of Mynde Park. Messrs. Cranston & Mayos of King's Acre Nurseries had a beautiful exhibition of Rhododendrons flanking the tent on the right, the masses broken-up with triangular designs of mosaic work composed of alpine and succulent plants, edged with miniature variegated Conifers, and backed with *Thuja aurea*, *Kalmias*, &c. Messrs. Cranston had also a very fine rockwork of alpine, Japanese and rock plants on the left hand on leaving the tent. Messrs. Wheeler & Son of Gloucester had a fine collection of Indian Azaleas grown and retarded for the occasion by their skilful foreman Mr. Cousins, whom we have missed for some years from the exhibition tents.

The principle on which Mr. Boscawen conducts these exhibitions is not the same as is usual on such occasions. There are no prizes offered, and there is no competition between the exhibitors. But they do not go unrewarded for all that. A sum of money is set apart by the Council of the Society, which is entrusted to Mr. Boscawen to distribute among the exhibitors according to the merit of their plants; and as Mr. Boscawen is himself a thorough horticulturist and knows when a plant is well grown, he exercises his judgment as to the amount which is to be given to each exhibitor. There is one advantage in this mode of exhibiting which is apparent on entering the exhibition tent—there being no classes a plant is placed where it is seen to the greatest advantage, and where it produces the most artistic effect. This method gives great facilities for grouping, and this is admirably carried out.

BALSAM CULTURE.

BALSAM SEEDS may be sown at various times of the year, but the best months are April and May, for the simple reasons that the Balsam is a sun-loving plant, and that is rather a scarce commodity in Britain early in spring and at the fall of the year. Choose flat pans in which to sow the seed, first draining well before putting in the light sifted compost they delight in. Drill the surface into separate lines, in which scatter the seeds thinly, allotting a line or two, according to the demand for plants, for each variety; cover the seeds well before watering well with a fine rose.

General Cultural Hints.—Our opinion respecting the proper place in which to grow Balsams is, that the old mode followed in dung-heated frames surpasses any other, no matter how complete the structure in its appointments: the exhalations arising from such a bed seem to supply the wants of the plant

better than any other material or appliance in use. The bed should be well fermented, and all noxious gases dispelled before the seed pans are partially plunged in sand, sawdust, or leaf mould, which ought to form a covering of 3 or 4 inches over the surface. After fixing the seed pans, cover each with a piece of flat glass, and keep close for a few days. When germination takes place admit a little air by raising the glass on edge. At the same time moisten slightly the soil; shade lightly for the following few days should the sun shine powerfully, but not otherwise; guard against cutting winds reaching the young plants, but on no account let them become drawn for want of ventilation at any stage of their existence. Balsams always do best when kept near the glass: never have their tops at a further distance than a few inches, lowering them as they grow.

Potting.—This must be conducted with almost punctual regularity, the progress of growth being so rapid and regular. The first set of pots used ought to be those known as "thumbs;" in these the plants require no drainage whatever. Proceed with the potting as soon as they have formed the second pair of leaves, singling them out carefully with as much soil clinging to their roots as possible. Lower the plants deep into the pots, so that the leaves only stand clear of the soil, and do not press the compost too severely to the roots on the first and second occasions of potting. Water well with tepid water as soon as they are potted, and return them into heat again. Potting should be performed in the evening, or at least after the excessive heat of the day; and by the time the sun is upon them the day following, they will have recovered the slight shock caused by being separated and having their roots exposed in the operation. The next shift may be into 4-inch pots, and the compost ought to be enriched by an additional amount of fresh sifted horse droppings, and a goodly proportion of rich brown loam added to the lighter material used for the seed bed and first shift; further, the loam ought not to be sifted, only broken with the hands into turfy lumps, the other constituents being made to form the finer parts of the compost. Without going further into detail, they ought to be shifted into larger pots when they show symptoms of getting pot-bound, and be repeatedly shifted until the required size of plants is reached. Remove all flowers before they show colour till the time they get the last shift. Supply them freely with tepid water, giving occasional waterings of liquid manure from the time that they are in 6-inch pots until the flowering is nearly over. Turn the plants at regular intervals of time to prevent them getting malformed in growth. Keep up a lively bottom heat as long as growth is required, but lessen the heat to some extent when they form flowers. Air them freely throughout their whole growth, and lower the temperature somewhat previous to their being placed in the conservatory. Gather the seeds before the pods burst, and preserve them dry in paper in a dry room.—A. KEAN, *Royal Winter Gardens, Edinburgh* (in *The Gardener*).

MANCHESTER HORTICULTURAL EXHIBITION, OLD TRAFFORD, MANCHESTER.

THIS Exhibition, which claims for itself the title of National, is not incorrectly named, for I question if even our metropolitan shows better deserve the name; while of all the great provincial shows, this great Whitnitude one, held under the auspices of the Botanical Society, holds the first place. The liberal character of the prizes, the excellence of the arrangements, and the courtesy of the well-known Curator, Mr. Bruce Findlay, have all combined to elevate it to that position. Some fears had been entertained that the sale of the grand specimen plants of the Messrs. Cole would have interfered with the success of the Exhibition this year; but these fears were unfounded, and a brilliant sunshine, not always to be had in Manchester, added to the enjoyment of the large number of visitors who came to see and be seen.

Instead of entering into details of the plants exhibited, which have more interest for local people than for the general public, I will endeavour to give a general idea of the whole. The Exhibition was held in a tent some 400 feet in length by, I should say, about 60 feet wide; the ground being broken up into beds of large size edged with turf, and being slightly undulating, the whole looked exceedingly well. It was somewhat in the style of the Regent's Park Exhibitions with which Londoners are so familiar, while Orchids and other tender plants were shown in the large conservatory.

Viewed from the mound at the entrance of the tent a grand scene of beauty presented itself, and the intermixture of flowers and foliage was never better managed. On the mound itself

were arranged some fine collections of Pelargoniums of the various classes from Mr. Ryland: the show and fancy groups were especially well done. In front of these were some grand pot Roses from Messrs. Paul & Son of Cheshunt; then came a grand group of Rhododendrons, with a Norfolk Island Pine in the centre. The oval bed on the right was occupied with Azaleas and Pelargoniums, with another *Araucaria* rearing its head above them; the second was occupied with Pelargoniums and Palms; the third with specimens of greenhouse Ferns; the fourth with greenhouse plants, Palms, &c.; while the corner bed was occupied with hardy Rhododendrons. On the left hand there was a group of greenhouse Azaleas; the second bed contained groups of zonal Pelargoniums backed with Ferns; the third a magnificent collection of Ferns from Mr. Shuttleworth of Preston, than which nothing finer has ever been exhibited; and the last bed was occupied with a group of twenty Azaleas. The extreme end of the tent was occupied with a grand collection of Rhododendrons bordered by two fine collections of hardy herbaceous plants in pots; while placed up and down in the tent were fine Tree Ferns, Palms, &c., the walks at the side being bordered with collections of hardy Ferns, *Ericas*, &c.

The conservatory contained some fine collections of stove and greenhouse plants arranged on the ground or nearly so, so that a much better view of the plants was to be had than when placed up high; while *Oreohide*, for which Manchester is so famous, were largely shown, although not perhaps quite so much so as last year, owing to Mr. Wrigley having sent his fine collection to the Metropolitan Show at the Aquarium; but Dr. Ainsworth, Mr. Broome, and others sent some grand specimens. I have already alluded to the Ferns of Mr. Shuttleworth, and I very much question whether such specimens of *Gleichenias* have ever been shown as these in this collection. The back plants of the collection were *Oyathea medullaris*, *Cibotium princeps*, and *Diaksonia antarctica*, while in front were these three splendid *Gleichenias*—*flabellata*, *Mendellii*, and *semi-vestita*. These were perfect plants and fine examples of successful culture. The same gentleman's collection of stove and greenhouse plants was also well worthy of the place it occupied. Amongst them were fine plants of *Ocotea undulatum*, *Dendrobium nobile*, *Apheleandra macrantha rosea* (Chilman's variety), and *Ocotea Weddelliana*. Amongst Messrs. Paul's Roses the most conspicuous was perhaps the finest plant of *Alfred Colomb* ever exhibited, adding another to the triumphs he has attained in overcoming the difficulties presented by the more delicate-growing varieties. Some of the collections of zonals were remarkably well grown, the plants being moderate in size, full of bloom, and the flowers of good quality. Messrs. Ashton's collection especially was very good, the varieties being *Rose Bradwardine*, *Reine Blanche*, *Mrs. Wm. Paul*, *Dr. Hook*, *Master Christine*, and *Aome*.

There is one point in which Manchester comes out very strong—viz, in the collections for out flowers of stove and greenhouse plants, and a more beautiful display than those exhibited by the Messrs. Cole in the nurserymen's, and Mr. Shuttleworth in the amateurs' class, it would be impossible to set up. Grand bunches of such *Oreohide*s as *Vanda tricolor* and *Aëride odoratum*; of *Ixoras* such as *Colei* and *coccinea*; of *Ericas* such as *ampullacea* and the varieties of *ventricosa*, with fine blooms of *Strelitzia ovata*, *Allamanda nobilis*, &c., all arranged with taste and care, presented a walk of beauty. Our London exhibitors came out strongly in the various classes; Messrs. Williams, Rolleston, Lane, Standish, and Laing contributed largely to the success of the Exhibition. The Messrs. Turner and Mr. Cypher of Cheltenham were as usual conspicuous in the bouquets, which are always so well done at Manchester, and in which they might give a lesson to some of our southern decorators.

The well-known courtesy and administrative talents of Mr. Bruce Findlay combined to make the Show a success; and it was a great pleasure to hear at the dinner that the debt of the Society had been reduced from £8000 to £1500, and that there was every prospect of its being wiped off before another year.—*D. Deal.*

NOTES ON VILLA AND SUBURBAN GARDENING.

Now that bedding plants are planted out in their summer quarters, and may be considered for a time out of hand, it will be well to see what can be done with the structures, such as hand-glasses, frames, pits, &c., in which the plants have been reared. There are many desirable plants which can be grown in frames, &c., for the decoration of the little greenhouse or conservatory, and for room and window use. These might consist principally of *Fuchsias*, *Balsams*, *Coleuses*, *Begonias*, *Ferns*, and *Grasses*, while others may be devoted to the growth of *Primulas*, *Cinerarias*, and several kinds of annuals; and the hand-glasses should be at once used for the advancement of outdoor Cucumbers on ridges; or in order to have choice I would advise that a single-light frame be put on a moderate hotbed for the growing of *Celosias* and the old-fashioned but useful crimson *Cockscomb*. These latter require considerable care, as they want moderate bottom heat for the roots, and at all times must be kept close to the glass.

My plan of culture is to sow the seed in a pot or pan of fine soil, and place it in the Cucumber or Melon frame. The plants are not long in coming up if kept moist, and as soon as large enough to handle they must then be pricked out into pots of well-drained soil, composed of loam, sand, and leaf mould. Here they soon grow large enough for each plant to occupy a small 60-sized pot, and if kept at not less than 60° night and day, allowing another 10° for sun heat, they soon fill the pots with roots, and if not potted-on for a time they will show their miniature combs, so that we are able to tell their shape, whether good or bad. Pick the best of them, or as many as are wanted, and they may be treated in two ways. Some of them have the soil washed from their roots, the plants being then potted in 5-inch pots, as low in the pot as is reasonable for the well-doing of the plants; while others may be shifted as they are into 6-inch pots. In each case the soil may be coarser, and about three half-gallons of old dried cow dung, or in the absence of that frame manure to one bushel of soil previously mentioned, and fine charcoal, or if not that two or three handfuls of soot; of course the soil ought to be mixed well with the hand, and the plants potted moderately firm. In the frame they must be kept plunged up to the rim of the pot and the plants not more than 6 inches from the glass, or they quickly run up in height, and when in flower their appearance is then spoiled. They must have good waterings when necessary (not by dribbles), and when the pots are filled with roots manure waterings must be given twice a-week. Possibly the roots will show themselves on the surface of the pots; then is the time to apply a surface-dressing of rich soil. As to temperature, they must be treated very similar to Melons—that is, the frames must be closed early in the afternoon, and the foliage and frame well sprinkled. This ought to be frequently done, as the plants are subject to red spider. Under such treatment the combs enlarge very quickly, and if reversed when they appear to draw too much one way they become upright and more regular in outline than they would otherwise be. When the combs are full grown more air should be admitted, so as to harden them off before they go to the conservatory. They last a long time in flower, and are among the best of decorative plants. I ought to say that care must be taken that no water lodges in the combs for any length of time, as it is liable to rot them, especially when in a cool place.

The other plants mentioned above may be divided into two classes; for instance, *Ferns*, *Coleuses*, *Balsams*, *Begonias*, &c., require an intermediate heat, such as the season affords now if the frames are closed early, the plants being sprinkled, stopped, and shifted-on when necessary.

Primulas and *Cinerarias* may be treated in a cooler place, but potted-on with great care, as they soon suffer from being over-potted, which has several times been pointed out in the Journal; they must, however, be kept nearly close to the glass, and in most cases partly shaded from the sun. The *Primulas* when fairly growing in pots by themselves like plenty of air front and back, so as to have a current circulating well among the plants. When they are strong this may be allowed both by night and day, and the same may be said of *Cinerarias*; in fact, when the plants become well established they do well on an ash bottom under a shady wall. Here they do not mind the morning sun, and will make very good plants by the middle or end of September, when they may be taken under cover.—*T. RECORD.*

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

THE recent showers and present genial weather has given an impetus to all crops, including weeds. We have been running the Dutch hoe through the ground between the rows of vegetables. When the surface of the soil is nearly dry after rain is a good time to do this kind of work. It was necessary first to look down the rows of Peas, Carrots, Parsnips, and similar crops, and to pull out any weeds by hand. Many persons do not take this trouble, and some will out at a weed between the plants with a hoe when it is almost impossible to kill the weed without also destroying the plants, and so making a blank space in the row. There are also careless hoers in another way. They make too long strokes with the hoe, and miss many weeds by burying them just under the surface of the ground. Whether a Dutch or draw hoe is used (if the latter the swan-necked sort is the best), all the ground should be hoed over; weeds may not be seen on all the ground, but it is not possible to make good work unless it is all done.

We grow our *Tomatoes* in pots, and the plants are placed under glass, generally against the back wall of the house, where they are not too much shaded. The Tomato does not object to a little shade, but it does not succeed well under Vines when they are closely trained on the trellis overhead. Those who plant the Tomato outside, if they have not done so, should lose no time, as the usual fault with it is that the fruit, in the more northern districts at least, does not ripen sufficiently early to be of good quality, a considerable portion of it remaining green

when the autumn frosts come. The plants are sometimes left too long in the seed pot, and do not receive enough pot room after being potted-off, and, to make matters worse, they are not gradually inured to exposure in the open air. Such treatment of an exotic plant brings insect pests and predisposes to disease, causing another great evil—late fruiting. Even in cold districts a well-grown plant that has been potted-on into a 7-inch pot, and is well established about the 1st of June, may be planted out without much fear of injury, and will bear a crop of fruit in good time to ripen. The best position for the plants is against a wall facing south or west. The plants also delight in rich open soil.

We have made a sowing of Peas, both late and early varieties. For the latest sowing William I. and Alpha are very desirable sorts. The only chance to obtain good salads after this time is to plant Lettuces, &c., in a cool position where the sun can act on the plants for a few hours in the afternoon only; this can be obtained by sowing or putting out the plants behind a north wall. It is now a good time to plant Leeks. This vegetable is more esteemed north of the Tweed than it is in the south. Every cottager's garden in Scotland contains a quarter of Leeks, and in many districts there is considerable emulation as to who can produce the best examples. The Leek is a gross feeder, and will not do well unless the ground is very rich. Those cottagers who keep a pig have an advantage over those who do not, as the best of the manure is usually reserved for the Leeks. Leeks are planted in deep drills, and are earthed-up as they grow.

PINES.

The Queens started in January are very slow in ripening this year, not one of them shows signs of colouring as yet. A high night temperature has been kept up, but this does not compensate for the want of sunshine, and it is certain that hurrying Pines on to the ripening stage by a high night temperature in dull cold weather is the cause of overgrown crowns and badly-swelled pips. Nor should the plants be shaken out of the pots and the greater portion of the roots be removed to accomplish the same end unless under very urgent circumstances, when one or two plants may be tried. At present it is not necessary to have the pipes very hot to keep up the night temperature to 70°; and this ought not to be exceeded. High night temperatures are never beneficial, often injurious, and always augment the coal bill. The last of the imported fruit are now in the market, and those who have plenty of good fruit ripening now will find it more valuable than it is at any other season. It is now a good time to start the plants into growth for the autumn and winter supply. Smooth-leaved Cayenne, Black Jamaica, and Charlotte Rothschild are the best for this purpose. At whatever reason it is intended to start the plants they should previously have had a rest. Pines may as well be rested in June as at any other season. When at rest a low night temperature is required, moderate watering at the roots, and a dryish atmosphere in the house; the bottom heat should not exceed 80°. When the plants are started increase the bottom heat to 90°, the atmospheric temperature from 60° to 70°; water the Pines with tepid water, say 90°, and let the moisture be much increased in the atmosphere. Suckers potted now in 6-inch pots will, under circumstances already recommended, grow away freely and make good fruiting plants before the winter sets in, to be ready for starting late in the spring for fruiting in the early autumn months.

FRUIT HOUSES.

It has been uphill work forcing Peaches this year, and gentlemen ought not to be dissatisfied if their gardeners cannot place fruit upon their tables quite as highly coloured or of such good flavour as usual. Where fruit is ripening the leaves ought to be laid aside, or cut off if they shade the fruit from the sun. If a leaf lays over the fruit and is not removed it will leave a mark on the fruit. If the fruit is just swelling after the steaming period the house may be closed at 4 P.M., and the trees well syringed with tepid water. If the weather should be very hot it would be better not to close the house quite so early; and much also depends upon the position of the house, whether it is span-roofed or lean-to. The temperature from sun heat ought not to exceed 90°, and the lowest minimum may be 65°, and this may be attained now with but little help from the hot-water pipes. The temperature would not fall below 70° at 10 P.M. from sun heat alone, and the sun is again setting upon the glass before 5 A.M. Of course, it is not necessary to have such high temperatures, but if the fruit is required as early as date as possible the trees will bear forcing as above at the time the fruit is swelling. If the fruit has been gathered from the earliest house the trees should be thoroughly syringed to cleanse the leaves from red spider, and it may be necessary to give the borders a good watering. See that all the young wood is tied into its place; and we again say, Do not tie in more shoots than will be required for the purpose of fruit-bearing next year. All gross growths must be removed.

GREENHOUSE AND CONSERVATORY.

Owing to the rapid growth of the plants there is plenty of

work here at this time. Climbing plants must be attended to before the growths run into each other and twist round the trellis to which they are trained. This should not be allowed in any class of plants. All the shoots must be trained so that the plants can be speedily undone from the trellis if it is necessary to do so. Amongst softwooded plants Cinerarias are now over, and the brilliant colours of the Calceolarias have also to give place to the stage Pelargoniums and Fuchsias. Many hard-wooded plants are also in full beauty; others coming on to succeed them must be trained into the proper shape before the flowers open. Others again may require repotting. If possible it is best to repot in dull weather; a rainy day is a suitable time to see to this. Where many plants are grown of course there are men to attend to them who are always under glass and will pot the plants when it is most convenient, but it ought not to be done in the teeth of a drying east wind. Those who are pushed with out-of-doors work will take the chance of a wet day for potting, and it is certainly best for the plants, as they do not dry up and suffer from the roots being injured. We have been potting Heaths and other New Holland plants that seemed to require it. It is a saving of labour to have a set time for potting, when all the plants of a certain class are done at one time; but it is not so good for the plants, and no one who wishes to make the most of his plants would pot them until they are well established in the pots. Small plants may require repotting twice in a season, others that are large only once, and large specimens may remain two years or more in the same pot and not be repotted. When it is not intended to increase the size of the pots, and yet it is necessary to repot the plants, they may be turned out and a slice be cut from the ball all round, say from 1 to 2 inches, according to the size of the plants; another good slice may be cut from the bottom of the ball. This will allow the plant to go into a similar-sized pot, but the old one must not be used again until it is washed clean.

Primulas, Cinerarias, Calceolarias, and other plants that are being grown to flower next year must not suffer from want of pot room, but should be repotted as soon as the roots begin to mat round the sides of the pot. If the above-named plants are grown in a house exposed to the sun it will be necessary to shade the plants for a few hours during the hottest period of the day.

Outtings of stage or fancy Pelargoniums put in now make very good flowering plants for next year. A single cutting should be put in the centre of a small pot, and when well rooted the plants may be repotted without any check to their growth. —J. DOUGLAS.

TRADE CATALOGUE RECEIVED.

J. Laing, Stanstead Park Nursery, Forest Hill, London, S.E. —*Catalogue of Stove and Greenhouse Plants, Florists' Flowers, Roses, Vines, &c.*

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates at which exhibitions are to be held.

SOUTH ESSEX (LEYTON?). June 18th. Mr. G. E. Cox, Wilmet Road, Leyton, Sec.
SWAFFHAM. June 14th and 15th. Mr. T. G. Smith, Hon. Sec.
LEWIS.—June 15th, July 6th, and September 19th. Sec. Mr. W. E. Jeffries, Henley Road, Ipswich.
EDINBURGH (Scottish Flower Society's Show). June 18th. Mr. E. M. Welsh, 1, Waterloo Place, Edinburgh, Sec.
CRISTAL PALACE (ROSES). June 16th and 17th.
COVENTRY. June 19th. Mr. T. Wilson, 8, Portland Terrace, Sec.
MAIDSTONE (ROSES). June 21st. Mr. Robert Beckett, Rochester, Maidstone, Sec.
FARNHAM AND SOUTH HAMPSHIRE. June 21st. Mr. H. Smith, Sec.
SPALDING. June 21st and 22nd. Mr. G. Kingston, Sec.
KENT (ROSES). June 22nd. Mr. T. W. Gray, Hon. Sec.
BRISGATE (ROSES). June 24th. Mr. J. Payne, Treasurer.
BURTON-UPON-TRENT. June 26th. Mr. F. S. Dunwell, Sec.
COLCHESTER. June 26th and 27th. Mr. W. Harrison, Sec.
LEAMING. June 26th, 29th, and 30th. Mr. James Birbeck, Delph Lane, Woodhouse, Leeds, Sec.
REHMERD. June 29th. Mr. A. Chomoull, Hon. Sec.
WEST OF ENGLAND (HERRFORD). Roses. June 29th. Rev. C. H. Baines, Crudenhill, Sec.
FROME (ROSES). June 29th. Mr. A. R. Baily, Hon. Sec.
WIMBORNE (ROSES). June 30th. Mr. G. Parker, Hon. Sec.
TORRAT. June 29th and 30th. Mr. W. Fane Tucker, Capt., Baddick Tor, Hon. Sec.
OXFORD (ROSES). June 30th. Mr. C. B. Ridley, 115, Aldate's, Hon. Sec.
BROCKHAM (ROSES). July 1st. Rev. A. Charles and Mr. C. Mortimer, Secs.
MARSDEN. July 1st. Mr. J. H. Edmondson, Hon. Sec.
SOUTHPORT. July 6th. Mr. A. Campbell, Sec.
ROYAL CALCEOLARIA HORTICULTURAL SOCIETY. July 6th and September 12th.
OUDELL. July 6th. Mr. Alfred King, Sec.
WESTMINSTER AQUARIUM. July 6th and 6th.
NEWARK (ROSES). July 6th. Mr. F. R. Dobney, Sec.
ALEXANDRA PALACE. Roses, July 7th and 8th.
WELLINGBOURGH. July 7th and 8th. Mr. W. B. Parks, Hon. Sec.
BALING, AUTON, AND HANWELL. July 11th (at Fordhook). Mr. R. Dunn, Baling, Sec.
NEVILL. July 12th. Mr. J. T. Rade, Bloomsfield Nursery, Sec.
HELENBURGH (ROSES). July 12th and 13th. Mr. J. Mitchell, Sec.

WIMBORNE, July 18th and 19th. Mr. F. Appleby, 5, Linden Cottages, Hon. Sec.
 HIGHGATE, July 18th. Mr. W. M. Birkel, 6, North Road, Highgate, Sec.
 CLYTON, BRINTON (Roses and Strawberries). July 18th. Mr. J. T. Jackson,
 Sec.
 LARK (Roses). July 18th. Mr. S. Cartwright, Sheep Market, Leek, Stafford-
 shire, Hon. Sec.
 KILMARNOCK, Roses, July 18th and 19th. General Exhibition, September
 14th. Mr. M. Smith, 11, King Street, Sec.

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

PARANOTUM CULTURE (F. G.).—Buy our "Window Gardening," by R. Fish. You can have it by post if you enclose the ten postage stamps with your address.

LABOUR POWER (L. D.).—Under ordinary circumstances to keep such a garden as you describe in good order it would require a head gardener, a foreman, ten men, and two or three boys. Many circumstances might arise, or may actually exist now, that would render more assistants necessary—such as in the flower department having to meet excessive demands for plants or cut flowers, elaborate dinner-table decorations, and similar "extras;" in the vegetable department a poor unkindly soil requiring much extra culture, difficulties in obtaining manure, or two gardens lying far apart; in the pleasure grounds and drives very high keeping, especially in spring and autumn; and in all an indifferent water supply, difficult of access, and without proper facilities for its distribution. These and a host of similar local matters, trivial in themselves, but of much importance in the aggregate, ought always to be well considered. Ignorance of such in your case prevents our speaking more definitely now.

STRAWBERRIES DECAYING (L. R. L., jun.).—Defective root-action is probably the cause. Less watering and weak liquid manure once a-week would prevent the berries decaying probably.

FRACH LEAVES BURNED (W. Phipps).—The easterly winds and frosty nights have blistered and blighted the leaves. Protection would have prevented the injury. We have not received the Grapes.

VINE LEAVES DECAYED (Mrs. C. W.).—The leafstalks are shrivelled—that is, decayed, intimating that there is not a sufficient supply of sap to sustain the growth. Water with tepid water liberally, and once a-week with weak liquid manure.

TOMATO FAILURE (Idem).—The usual cause is the soil being too rich and kept too wet. Try a poorer soil and less moisture.

MANURES (H. C.).—Guano and some of the artificial manures, such as are supplied by the London Manure Company, will suffice for your garden crops without stable manure.

COCCIDIIUS DIMINISHED (Louth).—We are informed by one of our contributors to whom we sent your letter, that though he has had thirty years' experience as a gardener his plants have never been attacked by disease. He is particular only in using soil of a medium-textured loamy character, taken off with the turf about 8 inches thick, and laid up in a ridge for not less than three months, employing it after that time up to three and four years old, chopping up rather finely before use. Seed is never saved, but is had annually from the seedman in the usual way. He states that your plants are affected by gangrene, caused by extraneous sap, a result of the plants being grown in too rich soil, the atmosphere being close, moist, and cold. A bristly heat and frost air-giving ought to rid you of the latter evil. It is also likely that the disease proper is a consequence of extraneous sap closing the plants' stamens, the roots often being in a healthy state when the leaves and stems are dried up. We should be obliged by information on this perplexing subject.

CRESSPOOL MANURE (H. C. O.).—Guano is a manure, and as applicable as soap. The cresspool's contents may be applied moderately to your Rose trees now whether on their roots or on Briar stocks, and to the Cabbages abundantly, also to Strawberries in the autumn, but diluted.

COCOA-NUT FIBRE FOR FERNS (West Bromwich).—If your specimens are healthy we should be loth to change their soil. Cocoa-nut fibre refuse is good for mixing with beam and peat for Ferns, but it cannot be held to supersede peat. It would be easy to purchase a small quantity of the fibre, and thus enable your gardener to give you proof of its efficacy by applying it to a few plants. It is very useful to have in a garden for propagating and plunging purposes.

STRAWBERRIES (R.).—Kears' Seedling, British Queen, Sir Harry, and Dr. Hogg ought to succeed in your Devonshire rich loam.

SEEDS (A. R. G.).—Under the title "Indian Seeds" (St. Vincent), on p. 457, we gave an answer.

ROSE EXHIBITIONS.—A *Committee* asks that the writer of the practical article in our last Journal signed "H. C." will state what number of boxes and length of table it would require to exhibit the seventy-two threes in on the plan he proposes.

SUMMER PRUNING (F. J.).—Yes, the shoot which you sent is a "pretty stem" one, in perfect condition for pruning.

SALT BRINE (J. S.).—This impregnated with the blood, &c., of herrings is a good manure. Mixed with five times its measure of water it may be applied between the rows of any of the Cabbage tribe, and to Rhubarb, Beet-root, and Artichokes.

WINTER-FLOWERING ANNUALS FOR A GREENHOUSE (J. F. C.).—Not many so-called annuals are to be depended upon for this purpose. The Peruvian Tropaeolums, of which we have now so many charming varieties, are really excellent; if sown during the present month they form good plants by autumn, and yield abundant flowers throughout winter. Sow the seed either in pans or an open border, transplanting the seedlings into pots, growing them in a cold frame for a time, and afterwards plunging the pots in an open subbed when the plants gain size. *Nemophila insignis* also flowers well in winter if sown in 5-inch pots about the last week of June. Dwarf Ten-week Stocks, *Phlox Drummondii*, *Portulaca Thellusonii*, *Balsams*, and *Celosias* are

all useful for the autumn and early winter months, and all may be treated in a similar manner to the Tropaeolums except the *Celosias*, which should have a place in a cold pit or frame. You are probably already aware of the great value of *Mignone*, *Oenotheras*, *Primula sinensis*, and herbaceous *Calceolarias* for conservatory decoration in winter and spring. There is still time for a late batch of the three last, and *Mignone* may be sown in succession from the middle of July till the end of August.

NAMES OF FRUITS (Charles Eel).—It is the Winter Greening, which possesses all the valuable qualities which you have discovered in it.

NAMES OF PLANTS (H. G.).—*Dodecatheon Meadia*, American Cowslip. (J. W. L.).—We cannot name either florists' flowers, nor flowers from leaves only.

POULTRY, BEE, AND PIGEON CHRONICLE.

BATH AND WEST OF ENGLAND SOCIETY'S SHOW OF POULTRY AT HEREFORD.

THERE are many advantages derived from the peripatetic habits of agricultural societies. The natives of many places see what prize beasts and poultry are and should be, and without the aid of the enthusiastic and often derided fancier, few breeders for mere use and profit would ever materially improve any stock, either four-footed or feathered. Local fanciers, too, are tempted to exhibit "this once," and perhaps, if successful, often try their luck again; and not the least boon is it to those who attend these meetings regularly to be brought from time to time to fresh places with fresh attractions. In winter we are well content to gaze year after year down the same long alleys of pens at the Crystal Palace, bright even in November, or to peer into the same dark corners at Birmingham; but June is of all others a month in which we can enjoy an expedition, and in which we are able to carry away special recollections of a pleasure associated with the particular meeting. Assuredly the Bath and West of England Society has taken us to pleasant places, to none more delightful than the old town of Hereford. We can almost forgive the Society for keeping our birds unprofitably in their pens from Saturday till Monday, and for bringing us with them by a series of ill-arranged trains, all crowded, all confused, all late, as they are wont to be on the eve of the great holiday, when it leads us to pass a Sunday in so exquisite a place, with its cathedral a model of restoration and reparation, and its winding Wye and deep meadows of luxuriant richness around. Many, however, cannot come to enjoy these charms—certainly the birds do not, and we must comment seriously as we have done before upon this needlessly tiresome arrangement. For six days and nights are the unfortunate birds penned up; add to this a day, or often two, taken up with travelling each way, and probably at least two more of confinement before the start to accustom them to the pen and to clean their feathers, and we have ten or twelve days during which for this one Show they are kept off their runs! This is not all. Here as elsewhere we are told, and properly too, that one of the chief tests of merit is "beauty of plumage." In white or light-coloured birds this necessarily means its purity and cleanness; but when birds have been thirty-six hours or perhaps forty-eight in a pen before the Judge sees them, how can he possibly tell which came clean and which dirty—in fact, which are "well shown?" We have before us schedules of agricultural shows at which the poultry are only shown one day, the rest of the exhibits remaining two. Why could not this Society follow in a modified way this good example? It has been rumoured that the poultry might be given up at these meetings. We should much regret to see this done, and trust that an experiment may first be made of a shortened time of exhibition. We believe the entries would be nearly doubled.

Hereford is of course *en fete*. The Show looks much as it has in other years and other places, and covers thirty acres. The poultry judging seemed to take an unusually long time. At 12.30 we were admitted to part of the tent, and no cards were up before 1 P.M. As of old, first on the list comes the *Spanish*. Mr. Jones is quite to the fore. The coup goes to one of his four cocks barely a year old, we believe; long, smooth in face, in blooming condition and with faultless carriage. Why his other yearling bird is left out we cannot conceive, unless it be that the Judge objected to his somewhat abnormal development of face towards the throat. The second-prize bird is an antique fellow with enormous face. The first-prize hens are as good as we have ever seen, in excellent condition and plumage. One of them can scarcely be beaten in a single-hen class. The second-prize pair are remarkably smooth in face, and we cannot say much more for them. On the whole, for the time of year, Spanish are in good trim.

Dorkings, as far as the Dark-coloured birds go, are not up to last year's standard. The first-prize cock is a big bird but blind with one eye. Second is a well-shaped bird and good in feet. He seemed suffering from cold in the eyes. We admired Miss Radclyffe's bird—a thorough Dorking all over. In hens a rich-coloured pair are first; one a little gouty, but both large. Second a fair pair all round. Silver-Greys are not many, but

the winner superb in colour and size. Both the cups went to them, which we have never before known to happen. The cup cock is a well-known winner, with immensely broad sickles and side tail feathers. The cup hens are far ahead in size of any of the dark birds. One of them is a little gouty, and we preferred their owner's highly commended pair. In Whites Mr. Cresswell again sweeps both up; his first-prize hens are the best matched pair of the breed we have ever seen. The second cock is a good Cuckoo; the second hens square-built massive Whites.

In *Cochins* the cup for cocks goes to a White bird; that for hens to Partridge. In Buffs the first cock is fine in size and splendidly feathered. Second a bird of a singularly pale lemon hue. We fancied that when full grown his flight feathers would be "slipped." In hens a fair pair, light in colour and well feathered, are first. We preferred the second-prize pair—thorough *Cochins* all over, with splendid leg-feathering. Both the winning Partridge cocks are good; the first one immensely broad and in good condition; the second in good trim and very rich in colour. The cup Partridge hens are heavily hooked and grouse-like in colour. Second a badly matched pair. In Whites Mr. Tomlinson's bird well deserves his cup and first. He is in splendid condition for the time of year. Second is an immense bird, very free from yellow, but not well shown. The hens—a nicely-matched, beautifully-white pair—are first; second are but fair; very highly commended are a fine pair. We suppose a twist in the younger hen's comb must have pulled them down.

Brahmas do not seem to wear well through the summer. The majority of them are rough and in poor condition. Not so Mr. Lingwood's first Dark cock, which in the usual trim of his owner's stock a grand bird, now rather too white in tail. Second a cock not in very good form. We think Messrs. Newnham & Manby's highly commended bird quite his equal. The first Dark hens are a sweetly pencilled pair with silver-grey ground colour. Second a darker pair, crisp also in their pencilling. We like Mr. Long's commended pair. The Light cocks are as a class very ragged and out of condition. Mr. Dean's old bird is first again. In hens a lovely pair of pullets take the cup most deservedly, for they are good birds and very forward, but we doubt if they will make large hens.

Games are of course in better condition than most breeds. First in Black Red cocks is a nice bird apparently young. We almost prefer Mr. Matthews's older second-prize bird. The Black Red hens are in poor trim. The first-prize one has a white earlobe; the second we liked better. The winning Brown Red cocks are both very stylish, and the cup deservedly goes to the first. The hens are not a remarkable class; the first is well ahead. In Duckwings the first cock is a smart bird; not so the second, which is apparently loose in wing. The first hen, which also wins the cup, is a capital bird; the second poor in carriage and large in comb.

Hamburghs.—The Spangled birds are as a rule in much better condition than the Pencilled. The first and second Golden-spangled cocks ran a near race, and both are good. The first hens are well ahead in mooning, but one is somewhat devoid of feathers on the head. The cup for cocks goes to the first Silver-spangled, which is not so long in sickles and has not such moons at the ends of them as we like to see. Second is a very pretty bird. In hens the cup pair are noble birds, and both the winning pens well placed. Only four Golden-pencilled cocks appeared. The best won, but the second bird has a very unnatural comb. The winning hens were well barred and matched, the rest were indifferent. The Silver-pencilled classes were, as usual in the south, very empty; the two winning cocks were not despicable.

Polish filled two fine classes. In cocks both the winners were Silvers. The cup bird is in fine condition for the summer, and a grand fellow; the second not his equal in bloom, but very fine in crest and unusually distinct in lacing. The first hens were a lovely pair of Silvers, we should have given them the cup; second White-crested Blacks with small and not well-shaped crests.

Houdans.—Cocks are all ragged. The first-winner large, stout, and healthy. Both the winning pairs of hens good.

Crêves.—The cocks are far better than their Houdan cousins. First and second are grand, and Mr. De Faye's highly commended bird is well shaped and short-legged. The first hens are very fine though rough, the rest only moderate.

The *Any Variety* classes are large and good. An elegant Black Hamburg is first in cocks, and La Flèche in excellent condition second, and Lady Dartmouth shows a very promising Black Cochin. In hens the cup (for which the class competes with Polish, Houdan, and Crêve hens) goes to a pretty little pair of Sultans, why we cannot imagine; Black Minorcas with those painfully pendulous and fleshy combs are second. Two very large pairs of Black Cochins, though scantily feathered on the legs, come from the yards of Lady Dartmouth and Mr. Serjeantson.

In *Ducks* the cup goes to Mr. Fowler's Aylesburys. Mr. Walker wins as usual in Rouens, and small fancy Ducks take

both the prizes in the Variety class. *Turkeys* are few and not remarkable. White Geese take first, and Toulouse second.

Bantams.—Every pen of Sebrights which appears is noticed. First are a lovely pair with pure white ground and delicately fine lacing. Second are Golden; the cock is too large, and we preferred the very-highly-commended Silvers. In the class for Black or White the latter are not represented. The Bantam cup goes to a pair of Blacks, not small, but faultless in colour, lobes, and condition. The hen in the second-prize pen had been much pecked on the head. We preferred other pairs in the class. Game Bantams are few, and, beyond the winners, poor. First Duckwings, second Black Reds. A Black Red is first and a big Sebright second in the class for single cocks.

Preuxons.—One hundred and three pens were entered, and the show is a fair one, though, of course, no rival for the great autumn and winter exhibition. In Carrier cocks the first Black is well ahead. We almost preferred Mr. Fulton's Dun to the winning bird of that colour. Both the winning hens are fine Blacks. Mr. Walker seems not satisfied with his poultry honours, but must try Carriers too! Pouters—Mr. Fulton's cup Pouter cock is an excellent Blue; his Black cock is disqualified. Second is a nice White bird. In hens Mr. Fulton takes both prizes with a Blue and Yellow respectively. In Bunts two pairs alone appear. First are Silver, second Blues. Dragoons are a nice class; Yellows and Reds win. Fantails are particularly good; Mr. Serjeantson's first pair are magnificent in form of tail, inclined to be large. His second pair are small; one of them shows as near a circle as possible in tail. The winning Trumpeters are, of course, Russian; first Mottled, second Black. Both the first and second Barbs are Blacks; we rather preferred the second, but the first are small and very neat in head. Arch-angels are a larger class than usual; first a pair of the darker shade, second a very purplish pair, bright all over the back. The cup for the best pair in the Show (exclusive of Pouters and Carriers) goes to a pair of peak-headed Red Turbits, small, well-filled, and rich in colour; second are a Yellow pair good in colour and head properties. Almonds carry off both Tumbler prizes. In Owls White Africans are first, and White with black tails second. In Jacobins a Yellow pair are first; the hen long in beak. We should have put Mr. Fulton's Reds in their place, they are very close in hood. Variety class—First Blue Frillbacks, second Silver Antwerps.

Mr. Hewitt judged the poultry, Mr. Tegetmeier the Pigeons. Our comments have necessarily been somewhat hurried from the late hour till which we were excluded from the poultry tent. Surely with such a staff as this Society must have they might begin to put up the prize cards before one o'clock, or at least they might set up a board like a cricket telegraph, as is done during the judging of horses here, with the awards of each class as they are given out.

POULTRY.—SPANISH.—Cock—1, Cup, 2, and 3rd, E. Jones. Hens—1, E. Jones. 2, G. Thomas. 3rd, G. Chilcott. DORINGS.—Coloured—Cock—1, 2, 3rd, J. Walker. 4th, T. Burnell. Hens—1, J. Walker. 2, J. Gee. 3rd, H. Topman. 4th, G. Cresswell. Cup and 2nd, G. Cresswell. Hens—1, G. Cresswell. 2, J. Walker. 3rd, Blue or White. 4th, G. Cresswell. 5th, J. neil. Hens—1 and 2, G. Cresswell. COCHINS.—Cinnamon and Buff—Cock—1, C. Taylor. 2, A. Swindell. 3rd, C. Bloodworth. Hens—1, Miss B. Radcliffe. 2, H. Tomlinson. 3rd, Capt. T. Robin. Brown and Partridge-feathered—Cock—1, E. Tudman. 2, H. Tomlinson. 3rd, T. Anna. Hens—1 and Cup, H. Tomlinson. 2, Miss B. Radcliffe. 3rd, Miss Mortimer. White—Cock—1 and Cup, H. Tomlinson. 2, H. Beldon. 3rd, J. B. Bousier. 4th, J. Fowler. 5th, Rev. R. Woodgate. BRAHMS.—Dark—Cock—1 and Cup, H. Beldon. 2, T. Ansell. 3rd, T. Ansell. 4th, H. Whiteley. Hens—1, H. Lingwood. 2, T. Ansell. 3rd, T. Ansell. 4th, Light—Cock—1 and 2nd, T. Dean. 3rd, H. Lingwood. Hens—1 and Cup, T. Dean. 2, B. Horsfall. 3rd, Countess of Dartmouth. GAME.—Black-breasted Reds—Cock—1, W. Stagg. 2, Mr. Matthew. 3rd, W. Jones. Hens—1, D. Thomas. 2, Rev. F. Dutton. 3rd, Major Newdigate. Brown-breasted Reds—Cock—1 and Cup, F. Matthew. 2, H. Martin. Hens—1, S. Matthew. 2, H. Brown. 3rd, W. Phillips. Ducking and other Greys, Blues, Blacks, and Whites—Cock—1, W. Phillips. 2, Messrs. Staveley. Hens—1, Cup, and 2nd, D. Thomas. 3, J. Mason. HAMBURGHS.—Golden-spangled—Cock—1, H. Pickles. 2, H. Beldon. 3rd, W. Hyde. Hens—1, W. Driver. 2, H. Beldon. 3rd, Miss M. Woodhouse. Silver-spangled—Cock—1 and Cup, H. Pickles. 2, H. Beldon. 3rd, H. Harris. Hens—1 and Cup, Miss E. Brown. 2, H. Pickles. 3rd, J. Gee. Golden-pencilled—Cock—1, H. Pickles. 2, G. Packham. Hens—1, W. Driver. 2, H. Beldon. 3rd, Silver-pencilled—Cock—1, H. Beldon. 2, H. Pickles. Hens—1, H. Beldon. 2, H. Pickles. POLISH.—Cock—1 and Cup, H. Beldon. 2, Countess of Dartmouth. 3rd, T. Lecher. Hens—1, H. Beldon. 2, T. Lecher. 3rd, Countess of Dartmouth. HOUDANS.—Cock—1, J. Scott. 2, D. Thomas. 3rd, Mrs. Valence. Hens—1, S. Thomas. 2, Mrs. Valence. CRÊVES.—Cock—1, P. F. Le Sueur. 2, W. Outback. Hens—1, W. Outback. 2, Hon. C. Parker. 3rd, H. Feast. ANY OTHER DISTINCT VARIETY.—Cock—1 and 2nd, Rev. W. Serjeantson. 3rd, Rev. N. Ridley. Hens—1 and Cup, A. Bigg. 2, T. Jones. 3rd, Countess of Dartmouth. J. W. Serjeantson. BANTAMS.—Gold and Silver Sebrights—1, G. Holloway. 2 and 3rd, J. Lloyd. Black or White—Cup and 1, J. Lewis. 2, J. Walker. 3rd, T. Phelps. GAME.—1, G. Hall. 2, E. Phillips. Any colour—Cock—1, G. Hall. 2, W. Morris.

DUCKS.—WHITE AYLESBURY.—Cup and 1, J. K. Fowler. 2, J. Walker. 3rd, J. Hodges. 4th, J. Walker. 5th, W. Evans. 6th, J. J. Hodges. ANY OTHER VARIETY.—1, J. Walker. 2, Rev. W. Serjeantson. 3rd, H. Yards. TURKEYS.—Cock—1, Rev. N. Ridley. 2, J. Booley. Hens—1, Rev. N. Ridley. 2, J. Walker.

GEES.—1, J. K. Fowler. 2, J. Walker. PIGEONS.—CARBONS.—Cock—1, R. Fulton. 2, J. James. Hens—1, R. Fulton. 2, J. Walker. Pouters.—Cock—1 and Cup, R. Fulton. 2, Rev. W. Serjeantson. Hens—1 and 2, R. Fulton. Everts—1 and 2, H. Yardley. DRAGOONS.—1, R. Fulton. 2, Hon. W. Sargent. FANTAILS.—1 and 2, R. Fulton. 3, H. Yardley. TRUMPETERS.—1 and 2, R. Fulton. BARNS.—1, R. Fulton. 2, H. Yardley. ARCHANGELS.—1, H. Webb. 2, O. Cresswell. TURBITS.—1 and Cup, G. Prumley. 2, R. Fulton. TUMBLERS.—1 and 2, R. Fulton. NUNS.—1, Miss A. Brooke. 2, Withheld. OWLS.—1, R. Fulton. 2, G. Gregory. JACOBINS.—1, T. Homes. 2, R. Fulton. ANY OTHER DISTINCT VARIETY.—1, H. Webb. 2, W. Dunman.

AYLESBURY DUCKS.

BY J. K. FOWLER.

THE White Aylesbury Duck stands pre-eminent; their reputation is universal; they are well adapted to almost every climate and soil; indeed, they are like the shorthorns amongst cattle, thriving anywhere and everywhere, from our warm southern coasts to the bleak mountain districts of the Highlands, in the burning tropical sun of Australia, and the icy coldness of the Canadian "fall." As their name denotes, their chief centre is Aylesbury in Buckinghamshire, in which town and its neighbourhood they appear to have been an established breed for more than a century past. For the farmyard let us strongly recommend them, as for that purpose they excel in every requisite. In the first place they reach maturity sooner than any other Ducks; they are as hardy as Sparrows, attain to a very great size, and are remarkably prolific. The London markets are supplied with enormous quantities of them; in fact, though it may perhaps appear to strangers almost incredible, oftentimes in the spring in one night a ton weight of ducklings from six to eight weeks old are taken from Aylesbury and the villages round about by rail to the metropolis. During the first week in January this year the trade commenced again (it is, by the way, unusually early), and I know of one "ducker" who then sent up his first batch of them, which at eight weeks old returned 12s. a couple. They are generally not killed till between seven and eight weeks old, when good birds will be about 4 lbs. weight each. Prices vary considerably during the season, from 9s. to a guinea a couple being obtainable; the latter price they sometimes reach towards the middle of March and the beginning of May, then they decline gradually in value till July, after which there is but little demand. It has been computed that upwards of £30,000 per annum is paid into the town and neighbourhood for this early delicacy. The "duckers," as the breeders of them are called, are for the most part a superior class of labourers—men who by their industry have saved up money enough to secure an independence from downright hard work, and who do not grudge giving their whole time and attention to the young broods, so long as the supply is in demand. But before I go further it will be well to describe as clearly as possible the system by which this curious trade is carried on. In and about the town of Aylesbury very many of the cottagers maintain, each of them, their set of Ducks—about four Ducks to a drake. These they keep in any outbuilding attached to their dwelling, and failing such a place in the cottage itself. From them the "duckers" collect the eggs, and generally bargain with the owners for their whole supply at a given rate for the season. They begin their collection in October, and the contract is often made for the whole produce up till June, a fair price being 3s. 6d. a sitting of twelve eggs throughout that time. During the last and present month I know that as much as 12s. per dozen have been constantly offered. The purchaser has to stand the chance of their proving fertile. The breeding stock of a "ducker" who does an average trade consists of six drakes and twenty Ducks; these all run together, and the brooks and ponds are looked upon almost as common property. It is a strange and pretty sight to see some hundreds of these snow-white beauties on the river Thames, which winds round and through a part of the old town, all with a large patch of red, green, black, or blue paint on head, neck, or wings, the distinctive marks of ownership. They are separated at night, driven up to their respective homes, well fed, and warmly housed. The eggs which were laid during the night time are set as soon as possible under large and attentive hens, for which purpose good Dorkings and Cochins are considered best. The Ducks themselves are never allowed to sit, though they may desire to do so; the result of this practice is almost certain to prove a failure. Thirteen eggs comprise a sitting, and these are easily covered by a large hen. Whilst speaking of the eggs, it will be well to dispel a stupid fallacy to which many give credence—viz., that drakes hatched under hens are objectionable, through having a partiality to fowls when grown up, and thereby causing a disturbance in the poultry yard. The eggs are either a clear or creamy white, or a very pale *eau-de-nil* green. This diversity seems to be a mere freak of Nature, and there is no truth in the old woman's story that the colour varies with the sex of the duckling in embryo. Such is not the case, nor does this variation of colour point to any impurity of the breed, for I have known my best Ducks lay both green and white eggs, and this change has taken place within a week.

To return to the process of rearing: the hens are set either in fish-pads, small hampers, or, in what I have found most serviceable, the round boxes in which cheeses are packed. In the bottom of these is placed some lime or wood ashes, and then a nest of hay or soft straw; there the hens must be kept as quiet as possible. Special care should be taken to guard against the intrusion of rats or other vermin, by which the hen mother may be disturbed, and, as is often the case, the whole sitting destroyed thereby. The period of incubation is twenty-eight days, and during the last week of that time care must be taken to sprinkle the eggs daily with lukewarm water, which softens the shells, so that when the time comes for the duckling

to make its appearance it has not much difficulty in breaking through its covering; this is only an imitation of nature, for in the wild state the parent bird leaves her nest in the early morning when the grass is covered with dew, and as she seeks her food of worms, grubs, and such like, her feathers become well moistened, and returning to her eggs she imparts to them that moisture which we by artificial means are obliged to give. When the young are hatched they should be left with the hen till well nestled, well dried, and strong enough to stand; many scores of ducklings are lost by inexperienced persons through their impatience to remove them from the nest. The little duckling is at first clad with soft yellow down, which gradually disappears as the feathers grow. After a few days three or four broods are put together with one hen, which is quite able to take care of them all. For market purposes the treatment of the ducklings is as follows:—They are not allowed to go into any water, but are kept in hovels or the rooms of cottages, each lot of thirty or forty separated by low boards; it is no uncommon thing to see two to three thousand all in one establishment. They are kept very clean and dry on barley straw; their food consists of hard-boiled eggs chopped fine and mixed with boiled rice and bullock's liver cut up small. This is given to them several times in the day for about a fortnight or more. When they are capable of consuming more they are fed on barleymeal and tallow greaves mixed together with the water in which the greaves have previously been boiled. My poultryman also uses horseflesh to mix with their other food.

The above constitutes all that is necessary to produce early ducklings for the table. Now, as to the treatment of such as are intended for breeding and exhibition: To produce birds of great frame and weight the same food is given during the earliest stage, but after about three weeks they are allowed to go to the water, and their food is varied as soon as possible, by giving them maize and barley alternately, when they can eat the same. They should be fed three times a day; and always have a trough of water by them, and it is an advantage to have some gravel or sand at the bottom, so that when drinking they also get hold of some grit, which helps digestion and tends to keep the bill the proper colour.

Little description is needed as to the plumage, for it must simply be the purest white throughout—a single discoloured feather points to impurity, and would necessarily be a disqualification. There is no difference between the drake and Duck, except that the male bird has one or two beautifully curled feathers in his tail, and is larger than his mate. When the birds are very young it is not easy to distinguish the sex, for the drake's feathers are not developed till they have once moulted. The question, however, can be solved by noting the difference in the cry, which in the Duck is a loud "quack, quack," whilst the drake makes a much fainter and not so distinct a noise. The bill should be long and broad, and coming straight from the skull, like that of a Woodcock. It must be a delicate pale flesh colour, and is so naturally; but a ferruginous soil will often affect them in such a prejudicial manner that it becomes quite yellow. Any spots of black or any discoloration on the bill should disqualify. Birds for exhibition must be kept out of the hot summer sun, and not allowed to run too much on the grass, both of which are likely to spoil the delicate pink and turn it yellow. The legs are deep orange. The whole body should be as symmetrical as possible, the neck fine and long. First-rate prize birds when well fatted will reach 10 lbs., but that weight is seldom obtained even by the best specimens exhibited at Birmingham. I consider 7 lbs. at twelve months old almost beyond the average. Very hot weather is sure to cause mortality to a great extent amongst young broods, and the expression "Like a dying Duck in a thunderstorm," often applied to a person who looks dull and stupid, is derived from the fact that when there is thunder in the air young Ducks are sometimes affected thereby in a peculiar manner, turning, as it were, giddy, becoming unable to walk, and frequently dying from the effects of the close atmosphere, which produces a sort of apoplexy. I think I have exhausted my subject, and will conclude with the following facetious lines from the pen of a local bard, who writes:—

"But of the Ducks—the Aylesbury Ducks,
There is no need to tell;
Through England broad their fame has spread,
And they themselves as well.
And there's no man throughout the land,
Nor yet beyond the seas,
Who loveth not the Aylesbury Duck
When served with early peas."
—(American Fancier's Journal.)

POULTRY AND BEE NEWS AND QUERIES.

THIS will be a memorable spring for bee-keepers in the north of Scotland as well as for all interested in the produce of the soil. The great thing was the snow and storms of April, which were so continued and severe that my bees did not get out of doors until the first day of May. In our quarter bees get out

for ailing often during January; then, if I recollect, not at all during February and March. About the first week of April they got out for several days, and flowers were making an appearance, when a stop came until the 1st of May; after which, however, they have been working almost uninterruptedly. To speak, therefore, of early swarms is not to be thought of.—J. SHERRER.

A FERTILE WORKER.

PRACTICAL apirians, who are in the habit of making themselves acquainted with the internal economy of their hives, not unfrequently meet with cases of drone eggs being laid and larvae reared in a queenless stock. For a long time these cases were inexplicable, but conviction at last resulted that the eggs must be laid by a fertile worker, whose power was accounted for by the supposition (for I do not think it is more than a supposition) that some worker larva had during its infancy received a portion of royal jelly, which had caused a partial development of its sexual organs sufficient to give the power of oviposition, but without power of receiving impregnation. The presence of a fertile worker becomes a very troublesome affair, for whilst in the hive the bees rear no queen and will not readily accept one if supplied; moreover, as there is nothing to distinguish the individual from the other workers it is not easy to get rid of it. It has been suggested that the fertile worker has never flown from home, and therefore if all the bees are taken away from the old familiar spot most of them will fly home, leaving the fertile worker behind. In a case which occurred last year in my own apiary I adopted this plan, and it was apparently successful, as the bees accepted a new queen immediately, and I was troubled no more with the fertile worker.

Many persons, although unable to account for the phenomenon of eggs being laid where no queen could be found, have doubted the reality of a fertile worker, preferring to think that a queen must be there although overlooked, and I do not think positive proof of an egg-laying worker has ever been recorded, but I have now the satisfaction of offering conclusive evidence. On the 25th of May last Mr. O. Poole of Weston-super-Mare, an enthusiastic apirian, sent me a bee and said, "Would you mind informing me if the bee sent is a fertile worker? There is, I am certain, one in the hive from which this is taken, which I caught to-day with the posterior portion of her body inserted in a cell in which I afterwards found an egg." The bee was apparently an ordinary Ligurian worker showing nothing abnormal in its exterior appearance. On opening the abdomen and cutting away the viscera, I was, I admit, surprised to find one ovary full of eggs, and the other but little more developed than is usual in the worker. Referring to the figure of the queen's ovaries, it will be seen that they are made-up of a great number of "ovigerous tubes," full of eggs from maturity to very minute. The ovary of this worker on the contrary had but five tubes, each containing about twenty eggs, the largest mature, but none very small, the organs terminating rather abruptly. I counted distinctly nearly one hundred eggs, some of which under slight pressure floated out into the liquid in which I was examining it. The sting and poison-bag was as usual in the worker, and I could find no trace of spermatheca. Unfortunately at this time I happened to have but little leisure, and in hurriedly attempting to mount the organs, the ovary being exceedingly delicate, broke-up and I failed to preserve it. Should ever a like opportunity occur I hope to be more careful and successful.—JOHN HUNTER, *Baton Rice, Haling.*

LIGURIAN VERSUS BRITISH BEES.

I HAVE been greatly interested in what has been said for and against these bees in the Journal, and the conclusion I have come to is that—1st, There must be a profit in keeping Ligurians for sale, to sell in swarms, or to sell queens for ligurianising other swarms; 2nd, That they are no better honey-producers than the common bees; and 3rd, That therefore to those whose aim is profit by means of honey it is a loss to invest in Ligurian bees.

These conclusions have been arrived at in various ways. So many of the evidences in favour of Ligurians came from parties who had them to sell, that I could not think their evidence was of a disinterested kind. Then I was greatly astonished that last year no one accepted the competition proposed by Mr. Pettigrew, who advocated the British bee; and, again, your correspondent "B. & W.," who otherwise appears favourable to the Ligurian, makes this important statement in the *Journal of Horticulture* May 11th: "I must acknowledge that I am far from satisfied that the common English bee is not in every way as profitable . . . as the Italian bee. . . . I have now had them for many years."

Mr. Pettigrew has the warmest thanks of many. He has fought unflinchingly on behalf of the English bee, and thereby deterred those whose aim was profit from incurring needless outlay in buying bees which, after all that has been said in their favour, have so little proof of their superiority as swarms or honey-gatherers.—JAMES SHERRER, *Cairnie, Aberdeenshire.*

OUR LETTER BOX.

HIVING BEES IN BAR-FRAME HIVES (G. D.).—Your straw hive should be quite full of bees before you attempt to put them into a bar-frame one. At present you would not get bees enough to make a good commencement in the new hive; but by waiting till the straw hive is nearly ready for swarming and then drumming them out they would form a strong colony, and soon fill the bar-framed hive. By taking all the bees out of a hive before it swarms all the brood in it is sacrificed, and this is a great loss; but as you seem anxious to have the new hive peopled, and as this season is a late one, perhaps your better way will be to drive every bee out by-and-by, and put them into the bar-framed. After all the bees have been driven into an empty straw hive turn it on its crown and put the frame hive on it. The bees will soon run up amongst the bars; or you may shake them on the dry ground, and place the hive over them, resting it on small bits of wood or stones to let the bees outside the hive creep in all round; or you may remove two or three of the bars, and shake them from the straw hive into the bar-frame one at once, and replace the bars. This is our mode of transferring bees into bar-frame hives. We first place the hive on its board, unscrew, remove the crown board or lid, take out two or three bars, drop the swarm in, remove the bars, and put the lid on; all very easily done, and is perhaps the best way of hiving bees in bar-framed.

ARTIFICIAL SWARMING (Youthful Amateur).—A letter on this subject will shortly appear, which will perhaps aid you. If you wish to promote early natural swarming feed your bees when they are not working.

METEOROLOGICAL OBSERVATIONS.

GARDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 6" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain.
	Barometer at 32° Fahr. & level of sea.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
1876.	Inches.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	in.		
May	30.057	55.5	51.5	N.	55.0	52.4	49.5	113.4	45.1	—	
June.	30.051	55.9	51.9	N.	55.0	57.3	45.5	105.3	57.2	—	
	30.049	55.5	55.1	N.W.	55.0	71.1	44.5	112.4	57.0	0.000	
	30.057	55.7	52.5	S.	55.5	59.0	49.9	114.7	55.1	0.000	
	30.051	57.0	52.4	S.W.	55.5	59.0	55.4	115.5	55.5	—	
	30.045	55.7	55.7	S.W.	55.5	57.5	49.2	105.3	45.0	—	
	30.081	55.7	55.5	S.W.	55.5	55.5	55.5	105.5	55.5	—	
Means	30.056	57.3	55.1		55.5	55.5	47.5	105.5	44.0	0.000	

REMARKS.

31st.—Very fine all day and a fine night.
June 1st.—Dark at 8 A.M., and rather so till 11 A.M.; brighter in the afternoon, but not either sunny or warm, though very pleasant.
2nd.—Very fine morning; cloudy in early afternoon, slight rain about 4 P.M., followed by a wet evening.
3rd.—Fine all the morning; rather dull afternoon; wet evening and night.
4th.—Fine morning; rather dull at times during the day, and cold at night.
5th.—Windy night and morning; dull at 6, and rain at 9 A.M.; rather heavy at 10, the wind having fallen; showers occasionally all day.
6th.—Slight showers at times, but a moderately fine day, but rather cold for the time of year.
Temperature a little higher than last week, but still cool for the time of year.—G. J. SIMMONS.

COVENT GARDEN MARKET.—JUNE 7.

BUSINESS has rather fallen off in consequence of the holidays, causing the prices of hothouse fruits to decline somewhat. Of outdoor produce the first peas from the west of England and from Kent have arrived during the week, and large supplies of new Potatoes still arrive from the Channel Islands and from Lisbon.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	5	0	Walberries.....	lb.	0	5	0
Apricots.....	box	1	5	0	Neckarines.....	dozen	5	0	0
Cherries.....	box	1	5	0	Oranges.....	per 100	5	0	0
Chestnuts.....	bushel	0	0	0	Peaches.....	dozen	3	0	0
Currants.....	dozen	0	0	0	Pears, highland.....	dozen	3	0	0
Black.....	do.	0	0	0	do. dessert.....	dozen	3	0	0
Figs.....	dozen	2	0	0	Pine Apples.....	lb.	1	0	0
Filberts.....	lb.	0	0	0	Pines.....	dozen	0	0	0
Cobs.....	lb.	0	0	0	Quinces.....	bushel	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	0	0	0	Strawberries.....	dozen	1	0	0
Lemons.....	per 100	0	0	0	Walnuts.....	bushel	4	0	0
Melons.....	each	6	0	0	do. do. do. per 100	1	0	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	4	0	0	Leeks.....	bushel	1	0	0
Asparagus.....	per 100	1	0	0	Mushrooms.....	pottle	1	0	0
French.....	bundle	1	0	0	Mustard & Cress.....	per 100	0	0	0
Beans, Kidney.....	per 100	1	0	0	Onions.....	dozen	0	0	0
Beet, Red.....	dozen	1	0	0	Onions, small.....	quart	0	0	0
Broccoli.....	dozen	1	0	0	Parley.....	dozen	0	0	0
Brussels Sprouts.....	dozen	0	0	0	Peas.....	dozen	0	0	0
Cabbage.....	dozen	1	0	0	Potatoes.....	bushel	2	0	0
Carrots.....	bunch	0	0	0	Kidney.....	do.	0	0	0
Cauliflowers.....	per 100	1	0	0	New.....	lb.	0	0	0
Celery.....	dozen	1	0	0	Radishes.....	dozen	1	0	0
Colcabbages.....	bunches	2	0	0	Rhubarb.....	bundle	0	0	0
Coumbers.....	each	0	0	0	Salsify.....	bundle	0	0	0
Endive.....	dozen	1	0	0	Scorzonera.....	bundle	1	0	0
Fennel.....	bunch	0	0	0	Seakale.....	basket	0	0	0
Garlic.....	lb.	0	0	0	Shallots.....	lb.	0	0	0
Herbs.....	bunch	0	0	0	Spinach.....	bushel	1	0	0
Khorradish.....	bunch	4	0	0	Tomatoes.....	dozen	1	0	0
Lettuce.....	dozen	0	0	0	Turnips.....	bunch	0	0	0
French Cabbage.....	1	0	0	0	Vegetable Marrows.....	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 15—21, 1878.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. a.	
15	Th	Ipswich Show. Royal Society at 8.30 P.M. Crystal Palace Rose Show.	72.8	48.2	59.9	8 44	8 16	0 16	1 34	24	0 15	167
16	F		72.6	48.3	58.8	8 44	8 17	0 27	1 34	24	0 23	168
17	S	1 SUNDAY AFTER TRINITY. Coventry Show. Oxford Show.	72.9	47.8	59.6	8 44	8 17	0 39	2 56	25	0 40	169
18	SUN		72.8	50.4	61.8	8 44	8 18	0 58	4 29	26	0 58	170
19	M	Royal Hort. Society—Fruit and Floral Com. at 11 A.M. [Royal Botanic Society—Second Summer Show.	70.8	48.6	59.7	8 44	8 18	1 12	5 58	27	1 7	171
20	Tu		72.8	50.5	62.4	8 44	8 18	1 41	7 28	28	1 20	172
21	W		74.4	48.8	61.9	8 45	8 18	2 25	8 44	29	1 38	173

From observations taken near London during forty-three years, the average day temperature of the week is 72.5°; and its night temperature 48.0°.

AUBRIETIAS.



NOW that spring gardening has worthily become so popular these richly-coloured, free-flowering, low-growing alpine plants are commanding considerable attention. There are no more useful spring-flowering plants than the Aubrietias, none so rich in their own violet-blue flowers, none so dense and free, none more hardy, and none better adapted for various sites and modes of decoration.

In the pure air of the country and in the murky atmosphere of the town they are equally at home, and impart rich masses of colour to any garden in which they are grown such as cannot be produced by any other plants at the same period, say from March until June. Indeed at no period of the year can such close and effective blue edgings be produced as by lines of the Aubrietias in spring. On rockwork no plants are so conspicuous as these when flowering, and even when not flowering their neat compact habits render them ornamental by their manifest appositeness to the sites which they thus occupy. For window boxes they are amongst the most appropriate of plants that can be employed, withstanding uninjured all the frost to which they are likely to be subjected, and suffering less from drought than most other spring-flowering plants. They will grow in almost any soil, and, indeed, nothing appears to injure these plants but extreme wet and overcrowding—that is, permitting them to be overshadowed by other plants. Overhanging shade they cannot endure. Nothing must intervene between their foliage and the sky, then will they prosper and perfect dense carpets of rich colour. As forming marginal fringes for raised beds and for hanging over stones or rustic work no plants can equal them in the spring, and if neatly clipped after flowering they are the reverse of being unsightly in the summer. They are gradually finding their way into all gardens, but there is still room for their increase, and their dozens may advantageously be increased to thousands, so effective are they when seen in long lines and large masses.

Most easy is it to raise these plants in large numbers. If one particular kind is desired for panelling where absolute uniformity of growth is requisite then a given variety must be increased by cuttings if the stock is scarce, and by division if it is plentiful. Cuttings of the young growth will strike readily in gentle heat the same as Verbenas, but they must not remain in confinement a moment longer than is necessary; they will also strike under hand-lights, dibbling them in deeply with all the length of stem that can be slipped from the parent root.

But the most expeditious mode of raising a stock of plants is by sowing seed in heat early in the spring, or at the present time under hand-lights, or even in the open ground. The plants from seed, however, show some variation of character: they will differ in habit, also somewhat in the colours of the flowers. Some plants will be more robust than others, some later in flowering than the rest; and all will not be equally floriferous. This diversity,

however, is not great and for ordinary purposes is no real obstacle in the way of producing a satisfactory effect, but for special and particular requirements, as in mosaic bedding, seedling plants are not quite reliable. The facility with which these plants are raised from seed and their more or less sportive character has resulted in the selection of varieties much superior to the original species. *A. purpurea*, pale lilac, produced *A. purpurea grandiflora*, pale blue; then came *A. Hendersonii*, violet blue; *A. Campbelli*, ditto with a yellow eye; and *A. græca*, reddish violet. Of these I have found *A. Campbelli* and *A. græca* the most useful and effective, producing splendid cushions of flowers during the spring months.

By sowing seed thinly in pans early in the spring, subsequently hardening-off the seedlings by gradations of temperature, I have had sturdy little plants ready for pricking-off in the open garden in May. By the autumn these grew into healthy tufts 6 or more inches in diameter, and which were transferred to the flower garden when the bedding plants were cleared away. In the following spring, or just a year from sowing the seed, they produced a display which was not surpassed, if equalled, by the lines and edgings of *Lobelias* in summer. Seed sown now in light soil and kept constantly moist to expedite germination, subsequently transplanting the seedlings into stronger and richer soil, will, if duly attended to, make plants 2 inches in diameter by November, and which will flower freely next spring. Aubrietias remove safely from the flower beds after blooming, become established in the reserve plot, and from thence remove again as safely into the beds in the autumn for another display.

Nothing appears to injure them but extreme wet, and shade by overhanging trees or flowers. Seedlings withstand wet much better than plants which have been raised from cuttings or by division of the roots. When a sufficient stock has been provided, I advise that every year seed be sown thinly as soon as ripe in the open garden, in order that a supply of vigorous plants is provided sufficient for all requirements and to meet all emergencies. If seed is selected from the best plants varieties still further improved are sure to follow. If the stock of plants happens to be larger than required by the owner of them, he will not have the slightest difficulty in giving them away to the admiring visitors who inspect his garden in April and May.

I observe by the interesting accounts of the gardens of Belvoir and Thoresby that Aubrietias are largely employed in the spring-bedding arrangements that have made these gardens famous for that mode of decoration, thus affording powerful testimony of the great value of these lovely plants. Not only are they available for panels and lines in regular bedding arrangements, but they are equally effective when grown as isolated clumps or cushions in mixed borders or informal flower beds; they are, in fact, plants for all gardens and almost any style of decoration.

By their extremely hardy nature, their compact and agreeable habits, their rich colours, and certain and free-flowering character; also by their adaptability for de-

corating gardens large or small, princely or humble, and especially by their easy growth and ready mode of increase, let me recommend *Aubrietias* as worthy of extended culture, and as the best of these, *Aubrietia grasea* and *A. Campbelli*.—
A SPRING GARDENER.

VINE CULTURE—YOUNG WOOD.

UNDER the above heading "OBSERVER" has, on page 427, placed on record a mode of practice which I have proved by many years' experience to be sound practice. I allude to the mode of training-up laterals by the side of the main rods, and pruning them at such intervals as the canes themselves suggest to be the best point for shortening.

The Vines under my charge twelve years ago had ceased to bear satisfactorily on their twenty-years-old spurs, the growths pushed too weakly to perfect good bunches and fine berries. I was not permitted to remove these Vines, neither to cut them down, for they were very old favourites with their owner, and he desired that the rods which had served him so long and so well should serve him until the end.

Observing that the eyes on the laterals were much finer at a foot distant from the main rod than close to it, I decided to try an experiment with one Vine by training the laterals by the side of the main rod, shortening these laterals at the best eye at the winter's pruning, and removing the eyes below it except the lowermost one, which I left to form a successional shoot for the following year's bearing—working, indeed, on precisely the same principle that Mr. Seymour adopted in his mode of training the Peach. I was well rewarded, for the bunches on that Vine were twice the size of the bunches on the other Vines produced from short spurs. The lower eyes, however, did not in all cases break strongly; but that was no great inconvenience, for it was easy to form new and stronger spurs, were it desirable to do so, at the extremities of the one-year-old shoots trained by the sides of the main rods.

By following out this simple plan the Vines which were ceasing to produce large foliage and good Grapes immediately recovered their strength, and without any further aid produced such crops of Grapes as they had, perhaps, never produced before, and at this time they are as fine if not finer than ever—the pride of the owner, and the admiration of visitors. They have for some years been managed on the spur system or the laying-in plan, according as the eyes suggested where the shoots should be out.

I need hardly say that overcrowding has always been prevented, which by a careful plan of disbudding is as easy as by the orthodox spur or any other mode of pruning. By the mode of laying-in young canes by the side of the main rods, bunches of Grapes may be produced on any given portion of the roof as certainly as if it was a matter of having the bunches ready produced for placing there.

Like "OBSERVER" I believe "much nutriment is stored in the old rods," but favourable channels must be provided for the Vine to expand, and, these afforded, the Vine will renew its strength. I am aware that Vines will continue to produce good fruit freely on short spurs for more than twenty years, and especially if their roots are kept near the surface of the border by annual dressings of soil or manure; but with Vines the roots of which have rambed far away the case is different, and the wood in that time frequently becomes puny and unproductive. One remedy for this, I am assured by experience, is to lay-in young wood thinly—very thinly, by the sides of the old rods, and an improvement will shortly be manifest. By adopting this plan the Vines under my charge shortly became so invigorated as to push eyes where eyes were invisible—that is, from the internodes of the rods between the spurs. Some young canes I pruned at 2-feet lengths, some at 3 feet, and some at 4 feet, according to circumstances, and as I thought would best fill the houses with superior Grapes.

I conclude by advising that so long as Vines produce well by pruning on the short-spur system, adhere to that plan; but if they fail, do not hesitate to lay-in young wood thinly and judiciously. Now is the time to do it.—A NORTHERN GARDENER.

EDELWEISS.

THERE was some correspondence last year respecting the probability of the Alpine flower Edelweiss (*Leontopodium alpinum*, syn. *Gnaphalium Leontopodium*) flourishing when transplanted to a low-lying situation. In August, 1874, not far above the baths of Bormio, on the Stelvio Pass, I met with

some roots of the plant, which I conveyed to this place, and it is now in full bloom, fourteen flowers in one pot. It has been exposed all the winter, the severity and long continuance of which seem to have suited it. We are not 50 feet above the sea, and its former home was about 6000 above sea level.—
W. C. W., *Salisbury, Bath.*

DRACÆNAS.

AMONGST decorative plants *Dracenas* are held in great estimation. In habit they are bold (even in young plants), and in specimens their appearance is stately and imposing. Where permanent effect is required I know few equals of such kinds as *D. australis*, *D. indivisa*, *D. nutans*, and *D. Veitchii* in the greenhouse varieties, their linear green leaves and graceful habit having a particularly fine effect; but the coloured-leaved stove kinds are not nearly so fine in aged plants as when the plants are in a young state.

Propagation is effected by cuttings, suckers, and seeds. The plants usually flower in the early part of the year, and require to be kept rather dry and impregnated, and they then set pretty well, the berries ripening during summer. The seed should be sown when ripe and placed in brisk moist heat, and the seedlings will soon appear and speedily make plants. Suckers come freely on some kinds, as *D. rubra*, but are sparsely thrown up by others; in fact, a majority do not give suckers only so distantly as to render this a very uncertain mode of increase. I always strive in potting to prevent the plants from throwing up suckers by removing the rhizomes which proceed from the root-stem in finger-like fashion. These I break off close to whence they proceed, and these parts are cut into lengths of about 2 inches, and are potted in 3 or 4-inch pots, and buried an inch deep, laying the cuttings horizontally; if placed in bottom heat of 75° to 85° and kept moist and close they soon throw up shoots, and when 3 or 4 inches high they are removed to the stove and grown-on, making good plants by autumn, they being put-in in March.

Another mode of propagation is by striking the crown, either by severing it or leaving it upon the stem. The last-mentioned mode of propagation is by far the most desirable, as by it we obtain plants available for decoration in their full character in a short time, and in moderate-sized pots. My practice is to make an incision transversely about halfway through the stem, and take out the part by a cut upwards slantingly, not making it long—perhaps half an inch, taking care that the upper cut be transverse, and repeating the same on the other side of the stem, but a little lower, so that the cuts are not quite opposite each other. This operation must be performed with care or the head will fall over. With a weak stem I do not cut nearly so far through it, contenting myself with a lesser notch. All we want, however, is sufficient sap to rise to maintain the head fresh, and by the incisions to arrest the descending current and secure roots above the notches. The notched part for about 2 inches above and the same below the notches is covered with moss, and secured in the first instance with a ligature of matting and then with copper wire, a little sufficing. The incisions are made only a few inches below the lowest leaves, and if there are any old leaves these are removed, the object being to have the plants with as short stems as possible. The moss is kept wet, and in the course of a few weeks roots protrude through it. The crown is then severed just below the notches, and the plant is potted, moss and all, up to the base of the leaves in a 5 or 6-inch pot, according to the size of the stem and plant. We have only to shade from bright sun for a few days and afford light sprinklings overhead, and we have shortly an established plant available for decorative purposes.

We have a long stem left, which if left in the pot will produce side shoots, and these when 2 or 3 inches long may be cut off close to whence they proceed, be potted singly, placed in bottom heat and shaded, and they soon emit roots. But this is only acting so as to secure a few plants, whereas by cutting-off the stem level with the surface the whole of the stem removed is available for propagation. It may be cut into such lengths as will fit into a pan, laying the pieces horizontally and covering them an inch deep with soil, and placing in a brisk heat and moist atmosphere, when young plants will soon be emitted, which when a few inches high may be taken off close to the old stem and potted. The stems left in the pans will give more than a first batch of rooted cuttings. It answers just as well to bury the stems in soil or tan in the stove, covering them about an inch deep. Plants raised in

this way will be in character by autumn, the stems being laid in soil in March or April. From the root-stem will proceed one or more shoots, which may be removed and struck or allowed to remain, but I do not consider that plants of this kind look well with more than one stem.

Dracenas require a compost of three parts of fibrous loam, and a part each of leaf soil, sandy peat, and silver sand, with good drainage, and to be grown in a position near the glass with an abundant supply of atmospheric moisture, light sprinkling being given overhead twice daily; but if the water be at all discoloured the foliage suffers more or less by its use, and syringing is in such cases best omitted, still keeping up a moist atmosphere by frequent sprinklings of every available surface. A close and cold atmosphere causes the foliage to spot, and so does water if remaining long on the leaves. The more light afforded the better is the colour, and yet the powerful rays of the sun should not be allowed to fall upon the leaves whilst wet; but whatever shade is given should be of a light description and only used in bright weather. The watering should be free, but care should be taken to avoid excess, or the roots will perish and the growth be stayed; and on the other hand, overdryness causes the leaves to have a pale sickly hue which is fatal to the beauty of the plants. Moderate pot-room only is required. Young plants I usually shift from 3-5 or 4-6-inch pots, and increase the size of pot 2 inches at a time, just allowing the pots to fill with roots before the next potting. Potbound plants do not grow freely, never making such specimens as plants which are kept in steady growth.

They do well in an ordinary stove having a winter temperature of 65° by day, 60°-55° at night from fire heat, and a summer temperature of 65°-70° at night and 75°-85° by day. The greenhouse kinds require of course the temperature of that structure. I have had the stove kinds doing remarkably well in a cold pit during summer, cloaking the lights early and keeping rather close so as to secure the requisite temperature. It is only right to say that a majority of the kinds may be wintered safely in an intermediate house—i.e., a warm greenhouse or cool stove.

There is so great an advance made and being made in this genus that the best of the older kinds are likely to be eclipsed by the new; nevertheless some of the old sorts—as *D. rubra*, for instance—from their great endurance of changes of temperature will always retain a share of public favour for particular purposes of decoration. All the varieties are beautiful.—G. ABNEY.

A FEW JOTTINGS AT THE SOUTH KENSINGTON SHOW.

THE report of the Show held on the 7th inst. is so complete that it may seem to be superfluous to notice any of the exhibits; but there were a few which are worthy, I think, of especial notice. One is so used-up in the matter of shows that it requires something to stir up one's enthusiasm, yet I do not know anything more commendable than the collection of Pelargoniums exhibited by Mr. Charles Turner. There was one plant especially—Charlemagne, which was in its way perfection. Every flower on it was good, the trusses were so evenly disposed over the plant, the stakes were so judiciously placed as to be hidden from view, and the general contour of the plant so exquisite, that it left nothing to be desired. Again and again I found myself standing in front of it, and the thought could not but occur, What do we want with larger plants than these? I remember the monsters Mr. Turner used to show, and think of those Mr. Ward now exhibits. They are very fine, doubtless; but then to get them one must have very old varieties, whereas by having plants of this size the newer varieties can be exhibited. Thus here were Isabella, Charlemagne, Protector, Ruth, Duchess, Emily—all new sorts, giving lovers of the flower an opportunity of seeing how great has been the advance even on flowers of a few years ago. The same grower's pot Roses deserve, too, a passing word; they were not as large as those exhibited at the Aquarium, but beautifully bloomed and well grown. The plants of Miss Ingram, Charles Lawson, and Duke of Edinburgh were especially noteworthy.

Any other season but the strange one we have been passing through might have enabled growers to send something in the way of cut Roses; but although there were several classes for them there was but little competition, and it could be well seen that in the nurserymen's class the bloom had been cut from plants indoors. The two or three amateurs who did ex-

hibit came from near Salisbury, leading one to conclude that they have a warm climate there, and even in their stands the greater number of flowers were Teas probably from walls. The usual varieties were here represented, but nothing worthy of being noted.

One of the most interesting groups in cut flowers was that exhibited by Messrs. Hooper & Co., Covent Garden, consisting of *Ixias*, *Sparaxis*, and kindred flowers. Amongst the *Ixias* were some very beautiful sorts, such as *Nelsonii*, *Conqueror*, *Grandis*, *Ossar*, *Amiable*, *Hybrida longiflora*, *Lady Slade*, *Pallas*, *Nosegay*, *Titus*, *Hector*, and *Oraterioides*; I missed *viridiflora*, however, the grandest of the whole race. Nor must I pass by altogether the double *Pyrethrums* exhibited by Mr. Parker of Tooting, which showed how much we may gain in the early decoration of our garden by their use. The varieties were *Boi Lacté*, *Progress* (very fine), *Floribundum plenum*, *Boule de Neige*, *Fulgens plenum*, *Nancy*, and *Rubrum plenum*. Both these and the *Ixias* are deserving of more extended cultivation than they at present receive.—D., Deal.

BITS ABOUT BELGIUM.—No. 2.

ALTHOUGH Brussels as the metropolis was naturally selected for the holding of the great Centennial Exhibition, it is by no means a horticultural city. It contains no renowned nurseries, and no public gardens of superior importance. True, there is the Botanic Garden, and the show of glass is somewhat imposing; but botanical gardens, as a rule, present few features of interest to practical horticulturists, and suggest fewer ideas that can be usefully turned to account by the ordinary gardener. Of more general interest are the parks. Of these two were visited, one the park of Brussels situated on the higher part of the city near the King's palace; the other, the Bois de la Cambre, being about two miles out, and is traversed by the morning coach *en route* for Waterloo.

The park of Brussels is a small but thoroughly enjoyable enclosure. In extent it may be about 20 acres. It is overlooked on the south side by the noble pile of royal buildings, between which and one of the principal entrances to the park is a spacious paved public promenade with one solitary tree in the centre. From the entrance to the park a broad straight avenue leads through it to the parliament house, which is seen at the end of the vista of foliage. The park is surrounded by the boulevards, and is enclosed by an iron fence, and is fringed by a characteristic row of *Limes*—characteristic because trained and trimmed in true continental fashion. These *Limes* are planted at distances of about 8 yards, and are grown with perfectly straight and clean stems. At the height of 10 to 12 feet the branches are permitted to grow, and are trained horizontally, forming a hedge of about 4 feet high and 2 feet through. This hedge hoisted aloft is trimmed as true and smooth as are our best hedges near the ground; and is conspicuous by the contrasting effect with the fine naturally-grown trees in the enclosure. Copies of this form of training may be seen in some villa gardens in the suburbs of London, but they are poor examples of the style which is so well carried out in Belgium and other continental countries. The mode of training is probably too formal for English tastes, and sufficient labour is not expended to carry it out in its integrity in this country.

In the park of Brussels there are no flowers and no evergreens. It is not a garden, perhaps not quite a park as we understand the term, but rather a wood intersected by several straight avenues for public promenade. These avenues are very wide, and are also planted with trees in straight lines and at equal distances, affording adequate shelter to visitors from sun and shower. The central promenade of each avenue is of smooth gravel, and at the sides are broad margins of grass 5 or 6 yards wide, the grass being kept short, yet not smooth like our English lawns. At the outer sides of the grass other promenades of gravel are bounded by the plantation. Thus there are three promenades of gravel and two of grass down each avenue, the whole grass and gravel, planted with trees at regular intervals. These are large full-grown trees, as fresh, green, and vigorous as if growing a hundred miles from the haunts of man, yet they are in a city of perhaps 800,000 inhabitants.

The body of the park is composed of trees irregularly and closely planted, yet not so thickly as to prevent each from attaining its full size and showing its natural form. The undergrowth is very dense, and is formed entirely of deciduous shrubs, *Lilacs* predominating. Into this thicket narrow curving walks penetrate, and in a few moments visitors who desire it

are hidden from sight amongst the mass of foliage. The ground is boldly undulated—is, in fact, a series of jutting mounds and deep dells, but the principal promenades are perfectly level. At certain points the avenues open into large open planted spaces. Seats are provided with almost prodigal liberality, and the main avenues are lighted with gas. There are cafés, and fountains, and music, the park affording a delightful retreat for the thousands of citizens of every rank and strangers from almost all countries who congregate within its precincts in the days and nights of summer. There are no prohibitory notices to "keep off the grass," no requests that "visitors must not touch," &c., but all are free to stroll, and ramble, or sleep, according to their tastes. It is a park established for enjoyment and wholesome recreation, and serves its purpose admirably. The trees are principally Elms—a large-leaved form of *Ulmus campestris* (*U. campestris major*), and are fine lofty specimens. There are also many splendid examples of Planes and some Chestnuts, but Elms and Limes predominate.

Parks in towns are frequently made too gardenesque, and the promenades are too narrow and unshaded to afford that easy freedom of enjoyment which is so greatly appreciated in summer by those who have been cramped and confined in the stifling atmosphere of office and warehouse. Such persons long for a retreat where Nature is seen and felt to predominate over Art—where the artificial work of man is overshadowed by the freer, bolder, grander expression of Nature's alluring pictures. The park at Brussels may not in all respects be a model park, but it affords an excellent example of meeting the requirements of citizens as a place of public resort, and that it answers the purpose for which it was established is sufficiently demonstrated by the thousands of visitors who assemble under its dense canopy of foliage. In the public parks which are now being formed in England (I do not allude to the great London parks, which both in extent and variety are superior to the parks in Belgium), trees are planted freely enough, and afford a shade so dense that the shrubs and flowers beneath them struggle for existence; but where shade is required for those whom the parks were intended to benefit little or none is afforded. The chairs and seats, as a rule, are placed on walks where they cannot be occupied in comfort under the broiling summer's sun. A striking example of this is seen in the gardens of the Thames Embankment. Where the trees are planted and shade will in due time be afforded there the visitors cannot assemble to enjoy it, while the walks and seats are perfectly unprovided with the means of shade, which is the most prohibitory arrangement that could have been adopted of rendering the gardens really enjoyable. The Brussels park suggests that the first and greatest requisite in a public park is delicious enjoyable shade—a suggestion which may well be recorded, and one worthy of being kept in mind by those engaged in or anticipating the formation of public parks in England. So far as regards thorough sterling gardening none was observed in Belgium at all comparable with the practice which prevails in England; but the Belgian parks by their formation and keeping suggest useful lessons deserving of being studied by those contemplating the formation of enclosures of the same nature and for the same purpose in the vicinities of cities and provincial towns in England. The Belgian parks all proclaim the same sentence—Keep out the carved stones, the artistic terraces, the chilling artificiality of formal garden treatment, and bring in the trees, the shade, the enjoyable refreshing freedom of Nature's bolder embellishment.—J. W.

WHICH IS THE BEST EARLY TURNIP?

FEBRUARY the 24th was a day of bright sunshine with a brisk wind, preceded and followed by a long spell of dull, dreary, wet weather. I took prompt advantage of that bright day to sow a quantity of seeds on a border specially prepared for that purpose in the preceding autumn. Among other seeds sown was a small bed of Early White Dutch Turnip, and alongside it another of Early White Stone or Six-weeks Turnip. Well, the plants sprang up in due time and were thinned, but no contrast could be greater than that of the two beds at the present time. The Dutch kind has yielded some capital little Turnips for the past fortnight, and not a plant shows any sign of bolting now; while the White Stone have all bolted to seed without forming anything like a useful root, and to-day (June 9th) an excellent dish of greens has been gathered from the run-away tops. Now, I wonder what is meant when

the White Stone is described as "keeping well?" Certainly in future I shall revert to the good old White Dutch for my earliest sowings, for had I depended entirely upon the other kind this season a vexatious failure would have ensued.—A KITCHEN GARDENER.

STUDLEY ROYAL,

THE SEAT OF THE MARQUIS OF RIPON.

WHEN in this neighbourhood it would have been a blame-worthy omission not to visit this fine old place. Its kitchen gardens and forcing houses are very extensive and well managed. The flower garden is well and naturally laid out. There is a magnificent park, which has also been laid out in the first style of the landscape art; and what is specially interesting to many others besides the antiquary, it contains the splendid ruins of Fountains Abbey. It would occupy too much space, and the information would not be generally useful, if I were to give in detail all the interesting features in the park and the ruins of the Abbey. In passing through the park lodge there is an avenue of Limes above a mile in length, and at the end of the avenue is to be seen a handsome new church which has just been erected; indeed at the time of my visit it was not quite finished. It is a very elegant example of the Gothic style, and consists of a nave with aisles and a chancel. The tower is surmounted by a spire 152 feet high. The foundation of this structure was laid by the Marchioness of Ripon in September, 1871. To the left of the church is a lake covering twelve acres, the banks of which rise abruptly, and are well clothed with woods.

Passing through the grounds by the lake we admire the skill of the landscape gardener and note a few remarkable trees, amongst them a number of splendid Norway Spruce, one at least 136 feet high and about 13 feet in circumference near the base. Close to the Spruce is to be seen a noble specimen of the *Pinus canadensis* (Hemlock Spruce), quite 60 feet high and 7 feet in circumference. These and a number of large examples of other species were planted about the year 1730. Some very old Yew trees have anchored themselves in the fissures of the rifted rocks, the roots of the trees crawling an immense distance down their shelving sides in search of sustenance. Through a subterranean passage partly built and hewn out of the solid rock we reach the Octagon Tower, from which we obtain a splendid bird's-eye view of the lakes and grounds, and Studley Hall in the distance.

Following the woodland paths and through a long avenue of Beech and other fine timber trees, and catching glimpses of a fertile mead, a silvery stream, and banks clothed with luxuriant woods, we reach Anne Boleyn's Seat, and all at once the magnificent proportions of Fountains Abbey burst upon our view. I had seen many ruins of a similar character before, and had viewed Melrose Abbey "by the pale moonlight;" and if the one at Melrose astonishes by the elaborate carving of the "prentice's window" and its chancel roof, Fountains Abbey astonishes not only by the beauty of its architecture but also by its immense size. The ruins cover an area of twelve acres. Some parts of the majestic structure are in a good state of preservation, but the Abbot's house and certain offices were nearly destroyed by a sacrilegious character named Sir Stephen Proctor of Warsell, who built what is called Fountains Hall in the time of King James I. at an expense of £3000, although he obtained the stones from the walls of the Abbey and the Abbot's house. At the north end of the transept is the tower, a splendid structure in excellent preservation. The height is 168 feet 6 inches, and the internal area of the base about 25 feet. Of the choir, the chapter-house, the chapel of the nine altars, the cloister court, and the kitchen offices with a fireplace sufficiently large to roast a bullock and two or three sheep whole at one time, I must refer the readers of this notice to an excellent guide-book published by Messrs. A. Johnson & Co., Ripon, and from which some of the above dimensions have been taken.

We now retrace our steps, and arrive at the flower garden and the dressed grounds under the charge of Mr. John Clark, the head gardener at Studley Royal. The men were working a Studley Royal lawn-mower on very long grass. It was a small 12-inch machine worked very easily by one man. It seemed to be a most efficient implement of its kind, and it is also most creditable to the maker, being easily set, well finished, and simple in its construction. From the terrace walk, 16 feet wide and 150 yards in length, excellent views are obtained of the surrounding country. Ripon Minster is seen through a

vista of lofty trees; in another direction Baldersby and Newby churches, each six miles off; and towering above the leafy canopy of intervening trees is the spire of the new church already alluded to. On the opposite side from the house of the terrace walk there are a series of oval and otherwise plain beds. Every alternate bed is filled with shrubs, mostly variegated Hollies, Aucubas, and Portugal Laurels; while the intervening beds are edged with Ivy, the centre space being filled with massive colours made up of the usual bedding plants. In the other part of the flower garden shrubs have also been freely used. About an equal number of beds are filled with shrubs and flowers. *Acer Negundo*, *Laburnums*, *Lilacs*, and many of the hardy Heaths are used. This judicious blending of shrubs with the usual bedding plants is worthy of high commendation. The garden is furnished all the year round, and in summer there is a sense of repose about it that is not possible in the Brussels-carpet style of flower beds. And what a saving of labour in the way of bedding plants! As it is, about forty thousand are used at Studley.

In the flower garden are a number of *Eucalyptus globulus*, or Fever Gum Trees. They are planted against a high wall, and all but two have bravely withstood the winter. Those that have suffered most were sheltered with mats, the others that are in good condition being under a tiffany covering.

The adjoining grounds are very beautifully laid out. Since Mr. Clark took charge their transformation has been complete. Old straggling borders of shrubs have been removed where necessary to allow of other clumps and borders being made more prominent; a greater expanse of lawn was thus secured, and isolated specimens of coniferous trees have either been planted, or more ordinary plants have been cleared away to allow of their more full development and to show to more advantage their handsome proportions. Some of the clumps of Portugal Laurels and of Box are very large, and there are few more striking objects on a well-kept lawn than a clump of Portugal Laurels sweeping the ground all round with their deep green leaves.

Most striking objects also are splendidly furnished *Oedrus* deodaras quite 50 feet in height, an *Abies cephalonica* between 70 and 80 feet high, a noble *Pinus excelsa*, and a noticeable Purple Beech.

In the greenhouse and conservatory there are a collection of miscellaneous plants, that are useful for cut flowers and for furnishing vases and other purposes of room decoration. The *Sparmannia africana*, introduced about the end of the last century, is found to be very useful for decorative purposes; and for large vases the *Araucaria excelsa* is much prized, associating well with *Yucca filamentosa variegata*. Some of the more easily grown but most useful of Heaths for cutting from are also grown, *Erica Wilmoreana*, *E. elegans*, and *E. melanthera* amongst them.

In the tropical department Orchids and other stove plants are well grown. Mr. Clark has all the varieties of *Bouvardia*, which he wisely propagates annually instead of retaining a number of large plants. The cuttings are struck early in the year; and the plants, as soon as they are rooted, are potted into small pots, and are shifted as they require it. Two of the most useful sorts are the red-flowered variety named Hogarth and the blush or white-flowered *B. Vreelandii*. *B. jasminiflora* is also grown in quantity, and a sort with larger flowers named Bridal Wreath. Amongst stove plants those that are especially useful for cutting are esteemed the most highly. Those gardeners who have to supply large quantities of flowers for filling vases and plants for room decoration have little time or heart for growing specimen plants; the time required to tie and train one large specimen must be devoted to growing a hundred ordinary specimens. Among Orchids *Dendrobium speciosum*, *D. chrysanthum*, and the old *D. nobile* are used for cut flowers. The winter-flowering *Calanthes* are also grown in quantity: some of the most useful of these are *C. Turnerii* with pure white flowers, *C. Veitchii* with red and various shades of rose colour, and *C. vestita*, the red and yellow-eyed sorts. Of the kitchen and fruit garden I must reserve a few remarks for another opportunity.—J. DOUGLAS.

PARAFFIN OIL AS A FERTILISER.—A correspondent of the *Dumfermline Journal* gives the result of experiments on seed with paraffin oil. He says:—My garden is overrun with rats and mice. In consequence, I had always to sow double the quantity of Peas and Beans requisite, and sometimes even had to sow them twice over. This year I put 22 lbs. of Peas and

6 lbs. of Beans into the ground without any manure, previously soaking the seeds for a short time in paraffin oil. Not a single Pea or Bean has been touched, and the crop has been enormous. My crop of Onions has every year been attacked with maggots, and my Turnips with fly. For the last eight years, as soon as the vermin made their appearance, I watered between the rows 2 ozs. of paraffin oil to six gallons of water. Both maggot and fly disappeared, and the crops and quality have always been extremely fine. I believe the seed sprinkled with the oil before sowing, or a certain portion of paraffin poured over dry earth and sown as guano, would answer fully as well, and I am satisfied it is a very powerful manure besides an effectual remedy against grub, wireworm, and all garden pests. Seed sprinkled with the oil is quite safe from all feathered and insect vermin. The proportion of two wine-glassfuls of paraffin oil to six gallons of rain water (imperial measure), is what can be applied to all kinds of green vegetables without injury. The growth succeeding its application is something wonderful.

THE DADDY-LONGLEGS.

THE paragraphists of some of our daily and weekly newspapers have busied themselves of late in chronicling the results



Fig. 121.—1, Eggs; 2, Maggots; 3, Maggot cases, protruding through grass; 4, Daddy-longlegs (female).

of what they are pleased to term a plague of insects, displaying occasionally, as we have noticed in the like instances before, a rather amusing lack of entomological and horticultural knowledge. The insect ravages which have been particularly observed during the present spring in the northern suburbs of London have been produced by our old acquaintance *Tipula oleracea*, one of the Crane-flies, also familiarly called "daddy-longlegs."

In the London Fields, Hackney, and in other grassy spots which serve to refresh the eye of the cockney stroller, and in the lawns also of suburban residents, who keep them strictly for their own delectation, these "turfiters" have appeared with equal coolness, making their presence too manifest by the parched or bare aspect of the ground. Manifest? Yes; but when the greater part of the mischief is done, since it is not usually until the larvae are nearly full-grown that the attention of the gardener is drawn to their proceedings, unless sods of turf happen to be cut into. This is done perhaps, and to the astonishment of the operator a host of small, wriggling, legless larvae roll about, evidently reluctant to quit their mother earth. In the lately-recorded instances unearthing was not needed, for the larvae showed themselves through the ground, rendered friable by their exertion and the effects of the biting winds of May. Some of the larvae possibly quitted their abodes in the hope of reaching "fresh fields and pastures new," though they were hardly likely to succeed in their endeavours. Continental naturalists have given strange accounts of migrations undertaken by larvae of some one or other of the species of *Tipula*, the phenomenon being witnessed as far back as 1608 by Schwen-

felt, who details various prognostics connected by the northern peasantry with these moving masses of larvae. They may journey thus for food as suggested, or to seek a suitable locality for their metamorphosis, Nature perhaps exciting them to wander lest one district should be over-populated with them. The flies rarely travel any great distance. By their united action the larvae of the Tipulæ gain two benefits in these journeys—they help each other along, and they retain by so grouping themselves the moisture that is essential to their life, which would otherwise be dissipated by the sun and air. Guérin-Melville declares that he has seen columns of larvae about 80 yards in length, and as broad as the hand; allowing for some exaggeration in this statement, still the numbers congregated in these columns must amount to millions. Though such migrations do not occur in the history of our British Tipulæ, it is very observable for its fluctuations—that is to say, in certain seasons there will be comparatively but a few larvae and flies, in others they will swarm. It is probable that unfavourable weather just as the flies emerge does in some summers destroy thousands of the flies ere they deposit their eggs, or kill the young larvae. Recent speculations on the subject have been put forward, to the effect that the diminution in the number of several species of our birds, especially such as the lark and the blackbird, has had to do with the increase of Tipulæ, but the evidence on this point is not conclusive. According to the Rev. J. G. Wood, however, the rook and the starling are particularly hostile to these larvae, and it does not appear that there has been any remarkable onslaught upon these species in the vicinity of the metropolis.

By many gardeners the larvae of the various Tipulæ are classed vaguely under the general head of wireworms. The term properly belongs to the larva of the Elaters, insects of the beetle race, easily distinguished by their endowment of legs, which are not possessed by the Tipulæ. It is obvious, therefore, that though frequenters of the turf, the larvae cannot be accused of being "black legs;" black-headed several species are, and that portion of their bodies is hard and muscular, enabling them to carry on subterranean operations. Since all the Tipulæ are not grass-eaters, but some devour the roots of Potatoes, Beans, and Brassicaceous plants, every horticulturist is interested in knowing what is best to do in order to check their increase. Of course the larvae may be sought for and destroyed, though the process is tedious, and the mischief is well nigh over usually ere this hand-picking can be put into operation. Killing the fly has been strongly advised, and not only may they be knocked down when on the wing, being feeble flies, but as the females have difficulty in disengaging themselves from their cocoons when they emerge, many may be "settled" by choosing the right time, and drawing a rake to and fro in the grass.—J. R. S. C.

NOVELTIES IN THE ROYAL GARDENS, KEW.

As one of the nearest centres of attraction we may conveniently commence with the Orchids, where there are many good plants to repay inspection. Foremost, from a decorative point, are the several splendid and distinct varieties of *Cattleya Mossie*, which yearly produce a grand display. These are accompanied by *C. Turneri*. *Trichopilia albidia* deserves attention, not only for the beauty of its flowers but also for the sweetness and strength of their fragrance. The grotesque flowers of *Brassia verrucosa* at once strike the attention, and of green-flowered Orchids it is perhaps the most ornamental. The sepals and petals are extremely narrow, and the two lower sepals approach a length of 5 inches; the lip is nearly white, and spotted with dark green. Among the Vandas are *V. tricolor*, *V. suavis*, and *V. insignis*, all with flowers of good size, to which must be added *V. lamellata*, a species less ornamental, but of free-flowering propensity. The flowers are pretty, though curiously coloured with dull red and green. It is here well established on a block. *Phalaenopsis Liddemansiana* we think the most prettily coloured of that beautiful genus. A good plant is in flower, with also *P. rosea*, *P. grandiflora*, and *P. cornu-cervi*, chiefly to be admired as a curiosity. The *Azides* are represented by *A. falcatum* and *A. affine* var. *roseo-superbum*. *Broughtonia sanguinea* is one of the very few crimson-flowered Orchids, and very rarely is any other of the same colour in bloom. It is considered difficult to grow; but if there is sufficient heat and moisture it usually repudiates its character of growing less. *Dendrobium Devonianum* is the finest of the genus now in flower. *D. sanguinolentum* is the next in beauty of colour, though surpassed in form by

D. terite and *D. Pierardi*. There is also the somewhat curious *D. aduncum*. *Oclogyne ochracea* is extremely pretty and sweetly scented. It can perhaps be seen only at Kew and in one or two other collections. The flowers are pure white, save the lip, on which there are pale yellow blotches edged with a distinct margin of orange. They are nearly 2 inches in diameter, and are produced about eight on a stem. *Oncidium pulchellum* is the prettiest species now in flower; and of the *Odontoglossums* *O. Alexandræ*. Just now there is nothing as a curiosity to surpass *Polycaenia muscifera*, which exhibits a long pendulous spike of fly-like flowers. The *Cypripedium* collection is rarely without one or more choice members in flower. *O. Argus*, of recent introduction, is a welcome addition on account of its conspicuous spots, which render it one of the most ornamental. There is also in flower the interesting and free-flowering hybrid *O. Dominii*, with *C. Hookeri* and several others.

The Rockwork is very attractive from the number of brightly coloured alpine plants in flower. *Senecio Fendleri* is a new species recently introduced, and has small silvery leaves, just as in *S. argenteus*, which it about equals in height. It is a native of North Mexico. *Saxifraga Mawiana*, introduced by the gentleman after whom it is named, from Morocco some time ago, is one of the most effective in flower. It grows from 6 to 8 inches in height, and flowers profusely, the individual blooms being larger than any other we remember. The leaves are succulent, and while green as the others of the tufted section, are unlike the rest from being either entirely red or margined with that colour when in an exposed position. *Phlox setacea* var. *violacea* is one of the most effective plants, and as it cannot be common should have attention drawn to it, for it seems a good plant for spring gardening. It is much in the way of *P. frondosa*, but the flowers are more brilliant and apparently more deeply coloured. *Aubrietia Hendersoni* is also a good plant of popular character. The flowers are larger and darker in colour than any other. *Cheiranthus Marshalli* is in great beauty, and from the slowness of its increase does not seem likely to be common. *Ethionema jucundum* is one of the smallest of the choice alpine plants, and is now in good condition. To the above may be added *Primula luteola* and *Ranunculus pyrenaicus* as being rare and choice. *Primula japonica*, *Lithospermum prostratum*, and several of the *Dodecatheons* may be referred to as being highly ornamental.

In the Conservatory is a new and very fine *Boronia* (*B. elatior*) contributed by the Messrs. Veitch. While *B. megastigma* is the most mournful in colour, this is certainly the brightest. It is rather erect in habit; the leaves are pinnate, with narrow segments, and the flowers magenta.

Napoleonea imperialis, which we have before described, is flowering freely. The flowers, though many times less in size, are very suggestive of *Rafflesia Arnoldi*, the largest flower known, and which constitutes almost the entire plant, being without either stem or leaves. It is a parasite on some of the Vine order growing in Sumatra.

Syringa Emodi is an old but rare shrub, of which a few examples are very effective near the Herbaceous Ground. It has a handsome and distinct habit, standing boldly among other things when out of flower. The stems are all warty, and grow nearly erect; the leaves are oblong, and 6 or 7 inches in length. The panicles of pure white flowers are of considerable size, having a height of about 7 inches.

Fremontia californica is becoming a fine object from the number and size of its flowers. This plant is on the wall. The display of hardy *Rhododendrons* this year is magnificent. The *Asaleas* also are in gorgeous condition.

SYRINGING.

Mr. Abbey has written very fully on this subject, and also strongly, so strongly that one might suppose that he had banished the syringe from the garden under his charge. Like Mr. Abbey I have not found regular syringings necessary to keep the foliage of Vines clean and healthy, yet I value the syringe and garden engine as amongst the most important of garden requisites.

Mr. Abbey takes Nature as his guide (he cannot have a better teacher), and suggests that if water were necessary for the under sides of the leaves of plants and trees that these sides would not have been sheltered from the rain. I do not quite see the force of that suggestion. Some flowers are erect and others pendant, but I am not prepared to say that that is because one Lily requires to have water in its cup while the

cup of the other must be dry. I think that, even in Nature, if the rain could reach the under sides of the foliage of trees it would often be of great benefit.

But Mr. Abbey appears to follow Nature in a somewhat fanciful manner. Because it does not rain upwards he denounces syringing the under sides of the foliage. That is understandable, but what about the other side of the leaves? If the under sides of leaves were so placed to be kept dry, may we not opine that the upper surfaces were so placed to receive rain? But yet Mr. Abbey does not follow Nature here, for his "Asaleas have not been syringed a dozen times in seven years."

If we follow Nature we find that during a showery period vegetation is freer from insects than during a time of drought. Whether the rain kills the insects or prevents their increase matters not, the effect is the same. I once had two standard Roses having huge heads on stems 6 feet high. In order to try the effect of clear water as an insect-preventive I syringed one of these Roses twice a-day, not syringing the other at all, and I never had clearer evidence of the value of the syringe and the efficacy of clean water. On one Rose I had healthy foliage and fine blooms, on the other thousands of insects. The water was applied to the under side of the foliage, but it did nothing but good. Since then I have used the syringe and pure water (nothing else) freely to my Roses, and have always prevented the increase of insects and promoted the health of the plants.

The importance of pure clean water in preventing the establishment of insects on trees and flowers is, I fear, insufficiently admitted. That the syringe has been frequently abused is no argument that it should not be used. I do not say that Mr. Abbey is wrong in his practice, but I greatly fear that if many were to cease syringing they would not afford adequate moisture by other means to compensate for the absence of artificial rain. I can grow Vines and plants under glass without syringing them, but I know there are many who cannot; but I cannot keep fruit trees, Roses, &c., out of doors healthy and clean without the use of the syringe or engine, and I do not think there are many who can: hence my advice is—Use the syringe and engine but do not abuse them, and do not be afraid of wetting both surfaces of the foliage of trees and plants.—W. J. B.

EARLY PARIS MARKET CABBAGE LETTUCE.

I HASTEN to add my testimony to the truth of Mr. Taylor's commendation of this, to me, new Lettuce. Part of a packet of its seed which I received from Messrs. Veitch was sown on January 23rd on a south border under a span-roof frame, and from this sowing we have now a supply of excellent Lettuces, compact, white, and crisp, and precisely similar in form to the engraving in Messrs. Veitch's catalogue. Everyone knows the importance of an unbroken daily supply of salading: hence the very great value of a Lettuce which in such an unfavourable season as the present is fit for use long before the supply from autumn-sown seed is exhausted. For the past two months Stanstead Park and All the Year Round, sown on the 16th of last August, and both Cabbage Lettuces, have been very good, and there are still a few excellent heads of All the Year Round remaining, so it will be easily seen what a valuable connecting link the new kind forms in our supply of Cabbage Lettuce. I may add that Sugarloaf Cos, sown August 30th, is now fit for use, and will continue good for some time.—EDWARD LUCKEYBURN.

SALISBURIA ADIANTIFOLIA AS A WALL PLANT.

THIS Japanese plant is very interesting under any circumstances, but it is when trained on a high wall very much like a Pear or an Apple that it presents its Adiantum-like foliage to perfection, presenting as it does a dense mass of its Fern-like leaves all growing in one direction—away from the wall of course. Thus trained I do not know of any wall plant that covers a large space so densely, and it never fails to attract the attention of those who have never before seen it, or seen it grown in this way.

It is not particular as to situation or aspect provided it is in a well-drained moderately rich border. In order to completely cover the surface of the wall allotted to it a leading shoot should be trained about every 8 inches. To see a tree covering, say, a space of 20 or 30 feet by 15 or 16 in this way is one

of the most interesting features of a wall devoted to ornamental plants. It is a deciduous tree, and in its native country attains to a height of 50 or 60 feet, or even more. It is not nearly so often met with in this country as its merits deserve. Its Fern-like leaves assume a variety of tints in the course of the season, and become of a bright yellow in the autumn.—R. M. (in *The Gardener*).

THE SOUTH ESSEX FLORICULTURAL SOCIETY.

THE summer Exhibition of this Society was held at Leyton on Tuesday, June 18th. The Society has been established twenty years, and has been the means in that time of doing a very great deal of good in the neighbourhood. It owes much of its success to the President, Joseph Gurney Barclay, Esq., who very kindly allows his grounds to be thrown open to the public, and in many other ways aids the Society.

The Exhibition on this occasion was perhaps the best which has ever been held. Mr. John Ward, gardener to F. G. Wilkins, Esq., of Leyton, showed his best stove and greenhouse plants, and gained the first prize. The plants have often been seen this season at the London exhibitions, and are almost as fresh as ever. *Statice profusa* was a mass of flowers; *Anturium Scherzerianum* had thirty fine spathes; *Bougainvillea glabra* was a noble plant, its rosy bracts were very conspicuous. Mr. Donald, gardener to J. G. Barclay, Esq., was a good second. He had a fine *Clerodendron Balfourii* and an excellent specimen of *Statice profusa*. Mr. Ward was again first for foliage plants; *Cocos Weddelliana*, *Todea superba*, and *Sarracenia flava* were most conspicuous. Mr. Donald was second. Mr. Ward had the best specimen plant, a fine *Erica Cavendishii*; Mr. Donald was again second with a very good *Franciscea confertifolia*. Mr. Donald had the best six Ferns, and very fine they were; *Dicksonia antarctica*, *Alsophila excelsa*, *Cyathea dealbata*, and *Davallia Mooreana* were in fine condition. Mr. Ward had the best eight Orchids; *Odontoglossum vexillarium* had four spikes from one bulb with twenty flowers; *Odontoglossum crispum*, *Aspidistra Lobbii*, and *Odontoglossum citreum roseum* were highly meritorious. Mr. Douglas, gardener to F. Whitbourn, Esq., of Loxford Hall, Ilford, had the second place. Mr. T. Foster, gardener to R. Johnson, Esq., of Walthamstow, had six magnificent *Calceolarias*, to which the first prize was awarded. *Calceolarias* were well shown by Mr. Merret, gardener to R. B. Ashby, Esq., of Walthamstow, and Mr. Douglas. *Fuchsias* from Mr. Donald and *Cockscombs* from Mr. Fisher, gardener to Rev. G. S. Fitzgerald, Wanstead, were highly attractive.

Mr. Douglas was the principal prizetaker for Grapes; he showed very good Buckland Sweetwaters, Black Hamburgs, and Muscat of Alexandrias well ripened. Excellent Strawberries were exhibited by Mr. Wighton, gardener to G. A. Grimwood, Esq., and Mr. Douglas.

The dinner-table decorations were also a principal feature in the Show, the beautiful silver cups offered by the Society bringing out some of the best exhibitors. Mrs. Burlay, Brentwood, showed three fine pieces and received the highest award. The base of the stands was made up with Maidenhair Ferns and white Water Lilies, Orchids, Spiraeas, and *Rhodanthé Manglesii*; the top was arranged with Grasses, pink Geraniums, and Orchids. Mrs. Soder, Brentwood, was placed second. The vases were done in the same style and with equal taste, but the want of Orchids told against her. For gardeners, Mr. Soder, gardener to O. Hanbury, Esq., Brentwood, was first, Mr. Fogarty, gardener to A. A. Whealey, Esq., Woodford, being a good second; his stands were a little too heavy.

There were some chaste button-hole bouquets. Mr. Monk, gardener to W. Fowler, Esq., was first with three very neat examples; and Mrs. Soder was second.

The cut flowers of herbaceous plants and stove and greenhouse occupied a table 15 yards in length, and made a fine display. Mr. Douglas was first in both classes.

Stage and fancy Pelargoniums were well shown. Mr. Fraser of Lea Bridge Road Nurseries sent a fine group of plants, mostly *Dracenas*, *Orotans*, and Ferns of the newest kinds. Mr. B. S. Williams of Holloway sent Orchids, Palms, and other fine-foliage and flowering plants.

NOTES AND GLEANINGS.

THE fine specimens of *ODONTOGLOSSUM VEXILLARIUM* exhibited at South Kensington on the 7th inst., were sent by Mr. J. Richards, gardener to Baron Lionel de Rothschild, Gunnersbury Park, Acton, and not by Mr. Denning as inadvertently stated in our report.

—THERE is now flowering at Sudbury House, Hammer-smith a remarkable example of *YUCCA CALIFORNICA*. We have by favour of Mr. Peacock had the pleasure of seeing this plant, and found it as beautiful as it is rare. *Y. californica* was introduced (as its name implies) from California in 1860, and is

now flowering for the first time in England. The plant is of graceful habit; the leaves being about 2 feet in length by an inch in width, and gracefully arched. The flower stem is about $1\frac{1}{2}$ inch in diameter, and is perfectly smooth to a height of nearly 5 feet, at which height commence the branchlets of flowers, continuing to a further height of about $8\frac{1}{2}$ feet. These branchlets, which exceed fifty in number, are closely arranged on the stem, and each bears from five to ten cream-coloured star-like flowers of six petals and fully expanded. Their texture is stout and waxlike, and their perfume delicious, not unlike that of the *Stephanotis*, or between the *Stephanotis* and *Gardenia*. This is a stately spike of lovely flowers, and must be admired for its intrinsic beauty apart from the novelty attaching to a "first flower."

— We have received from Mr. Smoothery of Braintree a flower of the double CHINESE TREE PÆONY. It is very large, 2 feet in circumference, and in colour delicate pink. The flower is rendered further attractive by numerous pink stamens bearing orange-coloured pollen, which are conspicuous amongst the petals; it also possesses a powerful odour. As summer-flowering plants for shrubbery borders few are more strikingly effective than these Pæonies, and the grand specimen before us suggests that Mr. Smoothery has a variety of great merit.

— THE subscriptions to the VAN HOUTTE MEMORIAL have already amounted to upwards of sixty guineas, and this without any special appeal having been made to the public. We have no doubt that the horticultural spirit of the country will be so far stimulated as to make this memorial worthy of the nation. Subscriptions will be received by either of the following:—Dr. Hogg, 171, Fleet Street, E.C.; Dr. Masters, 41, Wellington Street, W.C.; and Mr. H. J. Veitch, Royal Nurseries, Chelsea.

— THE thirty-third anniversary dinner of the GARDENERS' ROYAL BENEVOLENT INSTITUTION takes place on the 30th of June. The Chairman, Dr. Hogg, has a subscription list open, and Messrs. Sutton & Sons, Reading, have headed that list with a donation of £50. Contributions of fruit and flowers to assist the dinner will be very acceptable. They should be forwarded to Mr. Edward R. Cutler, Secretary, 14, Tavistock Row, Covent Garden.

— THE Crystal Palace ROSE SHOW this year is a fortnight too early, for the cold which has prevailed throughout the spring has retarded the developing of the flowers. Even in Devonshire Roses will not be in perfection, and all other flowers are similarly backward. The most striking evidences of this are the Hawthorns, the "May," flowers of which are only now just fully developed.

— A VERY excellent PORTRAIT OF THE LATE MR. JOHN STANDISH of Ascot has this week been suspended in the Lecture Hall of the Royal Horticultural Society at South Kensington, which will recall to the memory of his friends the features of one whose presence when alive was well known in that room.

— THE exceedingly inclement May retarded considerably the important work of BEDDING-OUT, and the weather during the first ten days of June has been anything but genial and of a summer-like character. Up to the present time many of the beds in the London parks remain unfurnished, and the plants which have been planted are in a standstill state. On some days the northerly winds have savoured of March rather than June, and vegetation is generally in a backward state. The weather is now warmer in London, and showers have fallen.

— As will be seen by advertisements, it has been found necessary to POSTPONE the Maidstone Rose Show to the 28th inst., and the Frome Rose Show to July 6th, on account of the lateness of the growth of the Roses by the long term of cold and inclement weather.

— *IBERIS CORBULEFOLIA* is now and has been for some time exceedingly effective in the gardens of the Royal Botanic Society, Regent's Park. For affording a close margin around shrubs, green in summer and winter, and of snowy whiteness in the spring months, this is one of the most suitable of plants. It is the best of all the *Iberises*, and on every rockery and in every hardy herbaceous garden it should have a place; its flowers are also exceedingly useful for associating with Ferns in the furnishing of vases and other room ornaments.

— THE new PELARGONIUM LATERIFLORUM KONIG ALBERT—double-flowered Ivy-leaved Pelargonium—as exhibited at South Kensington last week, proved to be a perfectly distinct novelty, the flowers being very double and produced in the greatest profusion. Their colour is also pleasing, being of a lavender-pink

colour. The plant is of dwarf habit, and will be useful for purposes of decoration as well as for affording flowers for bouquets and button-hole purposes. This novelty was raised by Herr Oskar Liebmann of Dresden, the stock in England being distributed by Mr. Bull, who exhibited the plant referred to.

— At the meeting of the HORTICULTURAL CLUB on the 7th inst., the following gentlemen were admitted as members:—Charles Pallo Wheatstone, William Edgcombe Rendle, John Cranston, Nicholas Voise, and Francis Arthur Dickson. Three other names were submitted for election at the next meeting, and several additions to the library both by gift and purchase were announced.

— We have received an interesting and very full sketch of the LIFE OF MATHIAS DE L'OBEL, the celebrated botanist after whom the genus *Lobelia* is named. It is from the pen of Professor Ed. Morren of the University of Liège; and we shall have occasion shortly to refer to it more fully.

— MR. CRAWFORD, gardener to Lord Petre of Thordon Hall, Brentwood, Essex, feeling his strength unequal to the efficient discharge of his duties, has been led to relinquish his office. His noble employer was not satisfied with expressing his regret at parting with an old and valued servant, but has given substantial proof of the estimation of Mr. Crawford's services by presenting him with a valuable gold watch from the establishment of Mr. Streeter. The watch bears the following inscription:—"Alexander Crawford, given to him by Lord Petre in acknowledgment of his long and faithful services, 1876." Lady Petre has added to the value of his lordship's gift by presenting Mr. Crawford with a gold chain. Mr. Crawford has been gardener at Thordon for twenty-six years.

— REV. F. D. HORNER has sent me a single pip of a green-edged *ANEMONE TALISMAN* (Simonite). It is a very good addition to its class. The tube is bright yellow, pale white, dense, and circular; the body colour a deep crimson maroon, almost black, and as perfect as that of Prince of Greens or Freedom; nor is there a single spot on its pure green edge, which is not sufficient, however, as the body colour touches it in places. Mr. Simonite writes that he has it in flower now very fine, "all its rings as round as engine-turned." I thought to be in the most select collections.—J. DOUGLAS.

— MR. BRAYLEY, in his antiquarian work entitled "Londiniana," details the HOUSEHOLD ACCOUNTS of a citizen residing in the parish of St. Michael Bassishaw in the year 1594. Among the details are these:—"Paid for a capon, 1s. 2d.; for a dozen of pigeons, 2s. 4d.; for twenty-eight eggs, 8d. For three pints of Strawberries, June 6, 1s. 4d.; for a peck of Pease, June 8, 10d.; for another peck, June 14, 5d.; a quart of Strawberries, June 29, 6d.; six Artichokes, August 3, 1s.; half a peck of Filbirds, August 19, 6d."

— SOME remarkable physiological facts have, says Mr. T. Meehan, been brought to light by Mr. F. Parkman of Cambridge, Mass., the eminent historian and good botanist. He had endeavoured to HYBRIDISE a number of species of Lily with the Japan *L. auratum*. To guard against the chance of fertilisation by their own pollen, the anthers were cut from the flowers before they had perfected, and other precautions taken. There seemed to be no chance of any result but to produce hybrids, or not to seed at all, according to all that has been heretofore known of such subjects. But in every case but one of those which have so far blossomed, the seedlings are like the female parents. There was one remarkable hybrid, and one only. That the male parent should be potential for reproduction, and yet powerless to transmit the slightest trace of its own characteristics, he thought among the most wonderful of the recently discovered facts in vegetable physiology, and would render the Lily family an object of renewed interest. As remarked before, some *Lilium superbum* growing near the others bore seeds freely, every flower perfectly, and, so far as he could see, without any special aid from insect agency. He had been interested in noting the remarkable manner in which the seed vessels varied. He exhibited a number of capsules, selected from twenty-five plants, each plant bearing all its seed vessels exactly after the pattern of each one exhibited. Some were about 2 inches long and linear, with rounded ends; others of the same character but with the end promorse, and giving a triquetrous character to the apex. Another had the carpellary edges perfectly smooth; another, perhaps like it, with tumid raised edges. Then there were lanceolate, oblong, clavate, pyriform, and almost globose forms. In old times many of these characters would have been deemed of sufficient im-

portance to found new species on; in times past, and in our own times under some prevailing theories, the variations would be looked for under some law of external influences modifying form. Without offering any opinion on these points, he would simply observe that all these plants were taken from one small spot at Berlin, New Jersey, and had all been growing in his garden under exactly the same circumstances together.

In accordance with long-established Whit-Tuesday custom what is known as the FLOWER SERMON was given on the evening of the 6th inst. by the Rev. Dr. Whittemore to a crowded congregation in the ancient City church of St. Katherine Cree. At this interesting service, as the *Daily News* has explained, the young persons for whom it is specially designed attend with nosegays of flowers, the hymns sung are chosen for their allusions to the flowery gifts of the summer season, and the sermon is preached upon some one of the many flowers mentioned in the Bible. It is about twenty-three years since it occurred to Dr. Whittemore to profit from the universal interest that is taken, especially among children, in flowers, by choosing this convenient day in the season of flowers for a children's service. The experiment was so successful and so acceptable to both young and old that it was continued; as a matter of course the service is now quite a City institution. Children with bouquets, and adults with smaller nosegays or button-hole flowers, fill every available space in the old church, and the preacher looks down on a veritable garden as he pleasantly discourses on his particular theme. Until the old-fashioned boxes in the church gave place to the modern pew the sight to individual members of the congregation will not be nearly so striking as it must be from the pulpit. Still, there are the ancient costumes and the happy faces of the Aldgate Ward charity children to be seen in the organ gallery, with their bouquets—the gifts of the churchwardens—and the not less beaming faces and smiling nosegays of the children in the centre aisle from St. John's School, Westbourne-park, not to speak of the display of flowers around the visitor in whatever box he may find himself inclosed. In the pulpit is a nosegay which has been placed there by a hand that recognised Dr. Whittemore's interesting services in the same way many years ago. The hand was then that of a gratified child, who now attends the services as a married woman, with children of her own, but who still claims the privilege of thus adorning the pulpit from which she has so long derived pleasure and instruction. Dr. Whittemore acknowledged this little attention almost in his earliest words. His discourse on this occasion was on the Olive flower from the text in Job xv. 83, "He shall cast off his flower as the Olive."

EARLY WRITERS ON ENGLISH GARDENING.

No. 15.

JOHN ABERCROMBIE.

It has been said with almost as much truth as wit that "Every man his own lawyer" would insure that he had a fool for his client; but it is not so in horticulture, and we have no hesitation in declaring our opinion that the little volume entitled "Every Man His Own Gardener" succeeded in diffusing a love for gardening, and enabling anyone to practise it successfully, more than any book that has been published. Yet so humbly did the author of that work estimate his own ability to instruct, and so little did he think anyone would admit him as a teacher, that Dr. Goldsmith was engaged to revise its language, and Mr. Mawe, the gardener of the Duke of Leeds, to see that its teachings were correct. They neither of them performed the duties they had undertaken, though Mr. Mawe received twenty pounds for allowing his name to be on the title page, and Goldsmith remarked that "Abercrombie's style was best suited to the subjects of which it treated."

The author—the entire and unaided author—of that volume was JOHN ABERCROMBIE, whose name is a household word among both amateur and professional gardeners, and to trace his career we now devote our attention.

He was born at Edinburgh in 1726, near which city his father conducted a considerable market garden. From his infancy he was employed to assist in this undertaking which was one particularly suited to his taste. At fourteen he became an apprentice of his father. He was thoroughly grounded in his profession, the practice of years being retained and concentrated by a habit we commend to all young gardeners of committing to paper the observations he made in its pursuit from a very early age. Soon after his apprenticeship expired,

being about eighteen, upon a domestic misunderstanding he came to London, where he obtained employment in some of the Royal Gardens, at Kew, and at Leicester House. Afterwards he became gardener to Dr. Munro and other gentlemen. About 1751-2 he became gardener to Sir James Douglas, during his continuance in whose service he married. Fearing his family might become troublesome he left his situation in 1759, and returned to Scotland with the intention of becoming kitchen and market gardener, but came again to England after an absence of only ten months. He was engaged in the service of several noblemen and gentlemen until 1770, when he engaged a kitchen garden and small nursery ground between Mile End Road and Hackney, attending Spitalfields Market with the products until 1771-2. At this period he became a publican in Dog Row, Mile End. His house was afterwards converted into the Artichoke Tea Gardens. By the importunity of his wife he left this and entered into the seed and nursery business at Newington and Tottenham Court, carrying on at the same time an extensive trade as a kitchen gardener and florist. The taste he displayed in arranging and the skill in cultivating gardens induced a recommendation to publish on those subjects; but it was long before his diffidence would allow him to make an attempt. He showed his MS. to Mr. Griffin, a bookseller in Catherine Street, Strand, who with Abercrombie's consent showed it to Mr. Mawe, the Duke of Leeds's gardener. Mr. Mawe highly applauded the work. When introduced to Mawe, whom he had never before seen, poor Abercrombie (as he used facetiously to narrate) encountered a gentleman so bepowdered, and so bedaubed with gold lace, that he thought he could be in the presence of no less a personage than the duke himself. However, they soon came to a right understanding, for he continued his visit for more than a fortnight and "sared sumptuously every day." He likewise received much information from Mawe, as the groundwork of improvements which he afterwards made in his book, "Every Man his own Gardener," and in other publications. They subsequently maintained a friendly correspondence for years. "Every Man his own Gardener" was first published under the authorship of Thomas Mawe only in 1767, and has passed through many editions. Afterwards becoming more confident Abercrombie published his "Gardener's Pocket Journal, or Daily Assistant," which obtained a very extensive sale and has since passed through many editions. Besides these he compiled many other books, of which we append a list.

For the last twenty years of his life he lived in a great degree upon tea, taking it three times a-day, seldom or never eating meat. He frequently declared that tea and tobacco were the great promoters of his health. His pipe was his first companion in the morning and the last at night. He often smoked for six hours without interruption. He never remembered taking physie until after the occurrence of the accident which caused his death, nor of having but one day's illness before his last, about twenty-three years previously.

He died from an accident on the 2nd of May, 1806. He at one period after the publication of his "Every Man His Own Gardener," had actually embarked to superintend the Gardens of the Empress of Russia, but the sight of the ocean inspired him with terrors which he could not overcome.

From 1796 to the time of his decease he continued to reside in Charlton Street, Somers Town, excepting when visiting or professionally employed. He was occasionally employed to plan gardens and pleasure grounds, for which he was sometimes handsomely remunerated. When unemployed he was a constant pursuer of knowledge and information at the various nursery grounds and gardens near the metropolis.

The following is a list of his horticultural works in the order in which they were published:—

1, "Every Man His Own Gardener, being a new Gardener's Calendar with Complete Lists of Forest Trees, Flowering Shrubs, Fruit Trees, Evergreens, Annual, Biennial, and Perennial Flowers, Hothouse, Greenhouse, and Kitchen Garden Plants, with the varieties of each sort cultivated in the English Gardens." London, 1767; twenty-sixth edition in 1857. In later editions Abercrombie's own name has appeared in the title-page together with that of Thomas Mawe which it originally bore alone, though he had nothing to do with its composition. 2, "The Universal Gardener and Botanist; or a General Dictionary of Gardening and Botany, exhibiting in Botanical Arrangement, according to the Linnæan System, every Tree, Shrub, and Herbaceous Plant that merits Cul-

ture." London. 1798. 4to. Mr. Weston says the first edition appeared in 1770. 8, "The Garden Mushroom, its Nature and Cultivation, exhibiting Full and Plain Directions for producing this Desirable Plant in Perfection and Plenty." London. 1779. 8vo. 4, "The British Fruit Garden and Art of Pruning, comprising the most Approved Method of planting

and raising every useful Fruit Tree and Fruit-bearing Shrub." London. 1779. 8vo. 5, "The Complete Forcing Gardener, for the thorough Practical Management of the Kitchen Garden, raising all early Crops in Hotbeds, forcing early Fruit, &c." London. 1781. 12mo. 6, "The Complete Wall Tree Pruner, &c." London. 1783. 12mo. 7, "The Propagation and Bota-



Fig. 122.—JOHN ABERCROMBIE.

nical Arrangement of Plants and Trees Useful and Ornamental." London. 1785. Two vols. 12mo. 8, "The Gardener's Pocket Dictionary, or a Systematical Arrangement of Trees, Herbs, Flowers, and Fruit, agreeable to the Linnean Method, with their Latin and English Names, their Uses, Propagation, Culture, &c." London. 1786. Three vols. 12mo. 9, "The Daily Assistant in the Modern Practice of English Gardening for every Month in the Year, on an entire New Plan." London. 1786. 12mo. 10, "The Universal Gardener's Kalender, and System of Practical Gardening." London. 1789. 12mo. 1803. 8vo. 11, "The Com-

plete Kitchen Gardener and Hotbed Forcer, with the thorough Practical Management of Hothouses, Fire Walls, &c." London. 1789. 12mo. 12, "The Gardener's Vade-Mecum, or Companion of General Gardening. A Descriptive Display of the Plants, Flowers, Shrubs, Trees, Fruits, and General Culture." London. 1789. 8vo. 13, "The Hothouse Gardener, or the General Culture of the Pine Apple, and the Methods of Forcing Early Grapes, Peaches, Nectarines, and other Choice Fruits in Hothouses, Vineries, Fruit Houses, and Hot Walls, with Directions for Raising Melons and Early Strawberries, &c." Plates. London. 1789. 8vo. 14, "The Gar-

dener's Pocket Journal and Annual Register, in a Concise Monthly Display of all Practical Works of General Gardening throughout the Year." London. 1789. 12mo. The thirty-fifth edition is dated 1857.

He brought up and well educated a large family, but survived them all except one son, who distinguished himself in the navy.

BIXA ORELLANA—ANNOTTA.

It is from the shrub the foliage and flowers of which is now figured that the Annotta of commerce is produced. Plants are seldom seen in this country except in botanical collections; but they are not devoid of ornament by their fine green leaves and chaste pink flowers. When grown from seed the plants attain a large size before producing flowers; but when raised from cuttings they flower freely when in a comparatively dwarf state. Cuttings of half-ripened wood strike readily in heat under a bell-glass. The plants require a summer temperature of 65° to 85°, and a winter temperature of 50° to 60°. This shrub grows spontaneously in South America and is cultivated in the East Indies. The fruit is like a Chestnut, a two-valved capsule covered with flexible bristles, and contains a certain number of seeds smaller than peas. These seeds are covered with a soft, viscons, resinous pulp of a beautiful vermilion colour and unpleasant smell like red lead mixed with oil; and it is this matter which constitutes Annotta. The mode in which it is obtained is by pouring hot water over the pulp and the seeds, and leaving them to macerate until they are separated by pounding them with a wooden pestle. The seeds are then removed by straining the mass through a sieve; and the pulp being allowed to settle, the water is gently poured off, and the pulp put into shallow vessels, in which it is gradually dried in the shade. After acquiring a proper consistency it is made into cylindrical rolls or balls, and placed in an airy place to dry, after which it is sent to market. This is most common in the English market, and is in the form of small rolls, each 2 or 3 oss. in weight, hard, dry, and compact; brownish without and red within. The other process of manufacture is that pursued in Cayenne. The pulp and seeds together are bruised in wooden vessels, and hot water poured over them; they are then left to soak for several days, and afterwards passed through a close sieve to separate the seeds. The matter is then left to ferment for about a week, when the water is gently poured off, and the solid part left to dry in the shade. When it has acquired the consistency of a solid paste it is formed into cakes of 3 or 4 lbs. weight, which are wrapped in the leaves of *Arundo* or *Banana*. This variety is of a bright yellow colour, rather soft to the touch, and of considerable solidity. Latat informs us that the Indians prepare an Annotta greatly superior to that which is brought to us, of a bright

shining red colour, almost equal to carmine. For this purpose, instead of steeping and fermenting the seeds in water, they rub them with the hands, previously dipped in oil, till the pulp comes off and is reduced to a clear paste, which is scraped off from the hands with a knife, and laid on a clean leaf in the shade to dry. Mixed with lemon juice and gum it makes the crimson paint with which Indians adorn their bodies; and they employ the leaves and roots in cookery to increase the flavour and give a saffron colour.

Annotta is principally consumed by painters and dyers; but it is also used in Cheeshire, Gloucestershire, and North Wilts to colour cheese with the pale yellow or flesh colour which distinguishes that which is made in these districts, the makers in Cheeshire using 8 dwts. to 60 lbs. of cheese; while those of Gloucestershire use 1 oz. to 1 cwt.—quantities which are too small to affect the cheese in any way except in colour. The Dutch use it for heightening the colour of their butter. It is used for the same purpose in some English dairies.



Fig. 122.—*BIXA ORELLANA*.

SAXIFRAGA NEPALENSIS.

I AM glad to observe that this charming plant was awarded a prize at the late show at South Kensington. Excellent as it is when grown in pots for conservatory and dinner-table decoration, it is of even more value as a hardy rock plant, because its elegant and prettily-marked foliage disposed in rosettes with that precision which is characteristic of this class of plants, always renders it an interesting and ornamental object throughout the year, and now when it is seen in the full glory of its slender tapering flower spikes, there is no plant more striking or attractive. It forms suckers, or what may be with greater propriety, termed lateral shoots, abundantly, so that a stock of it is easily obtained, every shoot rooting readily in an open border after it is separated from the parent plant.

It is by a judicious and tasteful admixture of plants of this type with others of bolder growth that a rockery can be rendered one of the

most interesting and attractive features of a garden.—EDWARD LUCKHURST.

[*Nepalensis* is a name which has been fancifully applied to the fine old plant, *S. corymbosa* var. *pyramidalis*.—EDS.]

OUR BORDER FLOWERS—GAILLARDIAS.

GAILLARDIAS are by no means an extensive group of plants, yet they are worthy to be recorded in the Journal, for it would be difficult to find a more beautiful family of summer and autumn-flowering plants than the varieties of *Gaillardia* picta. When this plant made its appearance among us some thirty or more years ago we tended it carefully as a choice greenhouse plant, and it was looked on as a wonderful acquisition to our collections, and when we found it would do us good service outside as well we admired it the more. Somehow or other

those gay flowers seem to be omitted from many gardens, but we would not have them entirely overlooked or forgotten.

Plants may be raised from seed, which can be had from most of our principal seedsmen. The seed should be sown in gentle heat in spring in sandy soil in well-drained pots, subsequently potting-off the seedlings, gradually hardening them off and planting them out at the end of May in beds or borders, and they will well repay the labour they have had bestowed upon them. I cannot conceive why they are so seldom seen. Some say they are hardy, but it is much the safest to put in cuttings in the autumn and keep them from the frost in a cool dry house under glass. They should be carefully watered, as they are liable to suffer from damp. They are useful for indoor decoration, as well as for beds and borders. They are liable to suffer from winds in exposed situations; this should be guarded against by pegging-down or tying-up.

G. aristata is one of the hardiest of the race; it is of dwarf habit, bearing orange-coloured flowers, and does well in most ordinary garden soil. *G. Richardsonii* is of taller habit, and requires staking to keep it from being broken by the wind. *G. Loiselei* is a tall-growing kind, these mostly endure through our ordinary winters. *G. grandiflora* is one of the gayest of the race, and I cannot understand why a plant so beautiful is so seldom met with; as a border plant, it is one of the most effective, and continues as long time in bloom. *G. bicolor* is a very desirable plant from North America, and there are other kinds equally worthy of culture.—V.E.R.T.A.S.

ROSES IN FRANCE.

Roses have always held a considerable place in the lives of Frenchwomen. Among the old customs of Auvergne was one which decided that a wreath of Roses should form the whole marriage portion of the daughters of noble families where there were heirs male to the lands and property belonging to them. In some parts of Normandy also a legal fiction existed, till very recently, by which a girl who had received a chaplet of Roses on her wedding-day had no further claim to the inheritance of her parents, though she might afterwards receive goods which were formerly bequeathed to her. At Lucy, near Auxerre, twelve boys selected by the Mayor were bound to accompany every bride to church, and they carried a cross made of Roses, for which service the bridegroom gratified them with seven sous and six centimes in money newly coined. A list of the ancient feudal rights of the Counts of Toulouse mentioned "bushels of Roses," which were to be paid to them in order that their wives might be supplied with rose water. A fief at Gournay on the Marne was held by the presentation of four Roses to the lady of the manor, or to the lord's eldest daughter, upon All Saints' day. If the lord was absent or unmarried these flowers were to be offered to the Virgin.

The Rose was first made the prize of moral conduct at a festival held in the latter part of the fifth century. It appears that St. Médard, Bishop of Noyon, was also lord of the neighbouring manor of Salency, and having wisely taken it into his head that virtue should not be its own sole reward, that prelate determined to recompense the most discreet young women he could find with a solid gift of twenty-five pounds and a chaplet of Roses. To be sure the twenty-five pounds were pounds of Touraine, valued at tenpence each, but they must have been well worth having in the year of grace 475. St. Médard perpetuated his gift by assigning a small parcel of his land to trustees for ever, on condition that the rent of it should be applied every year to provide for the accessories and expenses of what he described as "the Ceremony of the Rose." A blue ribbon was added to the chaplet of Roses by order of Louis XIII., who was graciously pleased to have a Rosière crowned in his name at the request of M. de Belloy, then Lord of Salency. "Go," said this monarch dryly to the Marquis de Cordes, a captain of His Majesty's life guard, who represented him on that occasion, "and offer this to the Rosière. It has been long enough the sign of favour, let it serve for once as a gerdoun to worth."

The ceremony of the Rose was kept up in this not ungraceful manner at St. Médard's feast for twelve centuries, when in 1774 a suit at law about the Rosière of Salency came before the parliament of Paris. The lord of the manor at that period seems to have been a surly grasping bumpkin, who wanted to destroy the pretty custom which had almost hallowed his estate and had conferred upon it a singular historical interest. This noble lout churlishly insisted on choosing his own Rosière, without reference to the inhabitants of Salency, and he claimed

the privilege of putting the crown on her head without any pomp or ceremony. He pleaded, too, with excessive bad taste and niggardliness, that the cost of the festival, though not large, could be reduced by at least half. These ridiculous pretensions were condemned as unsustainable in law by the Royal Bailliage of Chauny, acting on the opinions of the legal advisers of the crown; and in a formal sentence, pronounced on the 19th of May, 1775, the rules for the nomination of the Rosière of Salency, and for the order of march to be observed at the ceremony of her coronation, were judicially fixed. The lord of the manor, as obstinate as he was mean, appealed against this decision, but it was confirmed by a solemn judgment delivered on the 20th of December in the following year, and the lord of the manor was ordered to pay all the costs of the suit.

The peasantry of Salency, proud of their triumph, established a nobility of the Rose, and the family which could number most Rosières since the time of St. Médard was held the most illustrious member of it.

After the prominence given to the Rosières of Salency many other places were supplied with funds for a Rose feast by whimsical donors or testators. Most of the villages within hail of Paris have their Rosières. Belgium has initiated the pleasant usage of France, and during the sojourn of Louis XVIII. at Blankenberg he was requested to place the crown of innocence on the head of the local Rosière, who had much simple politeness in her nature; so, looking up at the august face of His Majesty, she curtsied and said, "*Dieu vous la rende*," a mode of thanking which made the audience smile, because Louis-le-Désiré had no direct descendants; indeed, Heaven did return some Roses to the king, for these flowers were the signs of homage which peers of France had from time immemorial offered to their sovereign, and many of the old families were for reviving the practice after Waterloo had opened the way to courtly high jinks again. The Rose homage caused a dispute for precedence between the Dukes of Montpensier and Nevers, which was only terminated by a parliamentary decision in favour of Montpensier as a duke of the blood royal.

On May-day in Provence a young girl crowned with Roses is seated at each end of the principal streets and thoroughfares of some towns. She is called "*La Belle de Mai*," and her companions levy contributions on the passers-by for her wedding portion, much as the Etonians begged for "salt" in the old "*Montem*" days. When a beautiful Princess Galitzin besought the blessing of Archbishop Hottot, the prelate silently took a Rose from the shrine of our Lady of Grace and presented it to her. The Emperor Charles-Quint gave a Rose as the device of his wife Isabella of Portugal. Luther had a Rose engraved on his private signet ring. At Provins the gardeners choose a king every year, and he is called "*Roi des Rosiers*," or monarch of the Rose trees. He is enthroned on St. Fiacre's day at vespers, just as the choristers who sing service in the saint's chapel chant the words, "*Deposuit potentes de sede, et exaltavit humiles*."—(*Daily News*.)

NEW BOOK.

The Fern Paradise: a Plea for the Culture of Ferns. By FRANCIS GEORGE HEATH. London: Hodder & Stoughton.

"THE earnest purpose of this little volume is that it may assist in developing the popular taste for Ferns in such a way as to lead to the more extensive cultivation of these graceful and beautiful plants in our gardens and in our dwelling-houses—may, even so far as such an arrangement would be practicable, in our places of business wherever they may be."

We applaud that purpose, for its result where effected is an increase of pleasure and a promotion of health whether in the garden structure of the wealthy or the window-sill of the poor. The author is enthusiastic, and, being capable as well, he writes efficiently, and no one can peruse his pages without resolving when opportunity offers to begin Fern culture or to increase his Fern stock. Ferns are plants for everyone and everywhere. No city alley is so dark or stifling as that Fern will not grow in it. We know a window-sill in such an alley on which are growing in well-cared-for luxuriance *Scolopendrium*, *Blechnum*, *Adiantum*, *Trichomanes*, *Polypodium*, and *Lactuca*. As a specimen of the volume's contents we will extract its notes on one of those species.

"THE MAIDENHAIR (*Adiantum Capillus-Veneris*).—This beautiful Fern is one of the rarest of our native species. It is found in Devonshire and Cornwall, in some parts of South Wales, and in Ireland—in Ireland, in fact, more abundantly than in any other part of the United Kingdom. But it is more than pos-

sible that the Maidenhair abounds in some localities where it has never yet been discovered. It often grows in inaccessible situations, and this fact would give a reason for the supposition which we have started. Rocks on or near the seacoast and dripping sea-caves are its favourite habitats.

"The Maidenhair has a black, hairy, creeping caudex of slender shape, from which are thrown up a mass of the most beautiful and delicate fronds. The stems of the fronds are more like thick hairs than the stems of a plant. The general outline of the frond is lance-like. Its length varies from 6 inches to a foot, but sometimes under conditions peculiarly favourable to its growth it reaches a length of more than a foot. The stem is about half the length of the entire frond. Then commences the rachis, on each side of which in irregular alternation are thrown out the branches—if they may be so called—of the frond. These branches, black and shining, are like lesser hairs, and to them are fastened on each side in irregular order the delicate fan-shaped leaflets of an exquisite shade of green. The leaflets are fastened to the branches of the frond by short, hair-like filaments black and shining somewhat like the stem and branches, but thinner and more delicate. The spores of the Maidenhair are borne at the back and on the edge of the leaflets, the margin of which is folded back to cover them, thus losing its green colour and becoming blanched.

"It is the fortune of few Fern-lovers to see the Maidenhair growing in its wild habitats. But as a cultivated plant it is not rare, for like all our Ferns the myriads of seeds which each plant bears favour its extensive propagation. Artificially grown it will in warm, moist, and sheltered situations live and thrive in the open-air rockery. But its excessively delicate nature requires peculiar care, and renders it more especially adapted for indoor cultivation. And to grow it successfully indoors especial attention must be given to its requirements. It cannot bear the sudden changes in temperature to which the atmosphere of some sitting-rooms is subject. When there is an equable temperature maintained and the air is not too dry, as for instance in rooms which are not constantly inhabited, there the Maidenhair will thrive in pots in the proper soil without any covering; but otherwise a covering of glass is essential, so as to keep around the plant a perpetual moisture. With such a covering it will revel in the warmth of inhabited rooms and become a delightful companion for the Fern-lover, distilling on the points of its fronds the dewdrops of its prison. A light soil suited to the delicate nature of the plant must be provided for the Maidenhair. Mix peat and silver sand together, the former predominating, and in the mixture let there be some broken pieces of limestone or sandstone. Or, if you will, imbed in the soil two large pieces of limestone or sandstone; put them near together; fill up the interstice with some of the soil you have prepared, and plant the delicate rhizome of the Maidenhair between. The pot or case in which it is grown you should half fill with broken pieces of stone or flower pot, intermingled with a few pieces of charcoal to keep them sweet. Then upon this mixture of flower pot and charcoal place the peat and silver sand, and thereon plant your Fern. If you have a window in which no sun shines you may there suspend your Maidenhair in the half shell of a cocoa nut; but holes must be bored in the bottom of the shell, so that when you occasionally dip it and its beautiful occupant in water the superabundant moisture may drain away, for remember that Ferns cannot endure soil rendered unwholesome by stagnant water. The moisture which they need must be fresh and pure. The exceptional delicacy of the Maidenhair requires exceptional care; but do not forget that for all the care which you bestow upon it, it will repay you by assuming in its adopted home the freshest and most delicate shade of delightful green, and the most delicate of graceful forms."

EFFECTS OF EXTREME HEAT AND COLD ON VEGETATION.

THE possibility of gradually accustoming tender plants to withstand a more rigorous climate than that to which they are indigenous has long been a favourite pursuit with our clever horticultural neighbours the French, who have or had a garden devoted to the furtherance of this particular object—a garden of acclimatization. Whether or not any plant was ever trained to resist frost, which could not face it before, we are not in a position to say. That very many species of plants will live and thrive in association, within certain limits of temperature, every garden in this country will testify. Hardy Conifers alone come from every corner of the globe, and so far they may be said to be acclimatized, but sudden extremes of heat or cold dispel the illusion. The Potato is a plant which has been coaxed and gently persuaded to bear frost for a considerable period of time and on a large scale in these islands, yet still it is as tender as ever. The attempt to acclimatise our English fruits and vegetables by residents abroad in

various foreign countries have also ended in similar failure, since we often hear of despairing endeavours to obtain a dish of Strawberries or Gooseberries from the cherished plants, which, however, are exhausted by their etiolation. Yet some of our English plants and animals when introduced to new homes find the climate so much more favourable that they threaten to crowd out the native plants and animals. For instance, horses and thistles in Australia, English pigs and weeds in New Zealand; and many other instances might be cited. A high tropical heat, while it has the effect of exciting plants from a temperate climate into a rampant growth which ends in exhaustion, will have the opposite effect on others, causing them to go naturally to rest, to be aroused only by the advent of cooler and moister influences. Many of the inmates of our stoves will assume this stagnant resting condition during the heat of summer, and show a disposition to fresh growth with the cool moist nights of autumn, as if coolness was the signal for the tropical plant to commence growth after the hot resting season. We practically reverse this natural rule by forcing our plants into growth by heat after the cool of winter. The approaching cold of autumn and winter is, however, the signal for our indigenous deciduous plants to put on the yellow leaf, sometimes very suddenly, and go to rest. From all these signs the practical cultivator should take lessons. The profundity of the sleep or rest which various plants take under the winter's cold varies in degree, as can be seen by their earlier or later wakening in spring, and by the more or less inactivity of the roots. Some become so dormant as to appear paralysed, and will die without any of the usual apparent outward effects of frost. A very few degrees of temperature hold the balance between life and death with many of our regular hardy plants; indeed it is the last degree, like the last straw, which breaks the camel's back. A curious instance of this is just under our notice. An old plant of *Cassia corymbosa*, which made growth as thick as one's finger against a wall, and 10 feet long last summer, is killed nearly down to the ground; but the portion of one branch next the wall, for half its diameter, is living, while the other half outwards is dead. *Clianthus puniceus* by its side is safe, except twigs which project a few inches from the wall, neither being protected in any way. Some plants of *Azalea indica*, planted out two years in the open shrubbery, and which flowered last summer, exhibit the same narrow limit between life and death. A few varieties have had the bark blistered off all along the stem, while the foliage has apparently protected the branches. Other varieties have resisted the cold and look uninjured.

During the severe frost of the winter of 1869 which killed so many shrubs throughout the country, it was a common phenomenon to find the bark severed from the wood in blisters as if exposed to fire, notably in the instance of Portugal Laurels and Sweet Bays, the effect being to all appearance the same. The injuries inflicted on plants by frost are generally well recognised, because anticipated: the shoots are nipped, the bark is blistered, or the whole plant is killed to the ground. Injuries from excessive heat are not so apparent. Some moisture-loving plants, like *Rhododendrons*, whether dry or not at the root, will become permanently paralysed and dried up, so that further growth is checked, and the plant recovers its equilibrium by pushing up young growth from the roots. Fruit trees against walls are often exposed to excessive heat. They are, as it were, between two fires—the heat of the wall behind, and the sun's heat in front. Permanent injury must follow, especially if they suffer from a deficiency of moisture at the root, which is not observed until the following season. The Apricot, Peach, and Plum, we are satisfied, suffer in this way; and the dying-off of their branches is quite as much to be attributed to this cause as to the effect of frost in winter. We have reason to believe that this dying of the branches of the Apricot is more common in the south than in the north, and on light dry soils than on clays. A hot sun pouring his rays directly on an Apricot tree, with its load of soft evaporating foliage, must make it a very severe trial to the roots and stems of the tree to find and convey sufficient moisture to keep them in health. The foliage we often see withering under the sun's influence, and the branches must often be very dry, the bark clinging to the wood; and if a period ensues when the moisture at the root fails in sufficient quantity to supply the demand, and moreover to enable the tree to elaborate and complete ripeness for another season, exhaustion must be the result, a weak bloom in spring, and feeble setting of the fruit, permanent injury

and desiccation of exposed parts; and when the sap begins to flow the following season, on its reaching the injured part in quantity, gumming and death of the parts beyond is the result. Under the circumstances described, the amount of water Peach and Apricot trees require at the root is not easily realised. No wonder they are obliged to strike their roots deep down into a moist subsoil in search of moisture for self-preservation. We believe that Peach and Apricot trees against walls are not by any means as a rule sufficiently supplied with water at the root in summer. We realise the necessity of protecting our Peach and Apricot trees from the wet and frosts of winter. There is probably an equal necessity for shading and protecting them from extreme heat in summer; at any rate covering the exposed stems of the trees by some light material, or encouraging the foliage to spread over the old stems, are precautions to be recommended. A fine show of blossom and a good set of fruit not unfrequently succeeds a season which has been wet, upsetting our notions of dryness in the autumn being necessary for the ripening of the trees, forgetting that dryness may mean exhaustion of hardy fruit trees. A dry summer succeeded by a wet autumn, leaving late growth unripe, is quite another thing, and also a great evil. Watering should be done copiously in summer while the sun is strong and evaporation rapid, the two first weeks in August being a vital period.—THE SQUIRE'S GARDENER (in *The Gardener*).

THE BUSH, WALTON-ON-THAMES, THE RESIDENCE OF MR. HENRY ORMSON.

Mr. ORMSON's name is widely known for his long and high standing as a horticultural builder, but it is not so generally known that he is a lover of gardening and carries it out on a small scale successfully. The Bush is an appropriate name for his residence, the house being completely embowered by trees—in fact, being in a wood, which has been laid out by walks, &c., affording quiet nooks and secluded spots of sylvan beauty.

The lawn contains examples of spring and summer bedding at the different periods of the year. Adjoining the residence is a small conservatory, and filled with *Calceolarias*, which, both as regards their superior culture and the excellence of the varieties, would have made a good second to the splendid plants which have been exhibited by Mr. James. At a short distance from the house is a walled kitchen garden, the crops being good and the fruit trees numerous and productive. In this garden, for the purpose of testing their qualities, are two vinerias and other glass structures. One of the houses is planted with *Muscats*; the other, a large and fine house, with Black Hamburgs, Madresfield Courts, and a rod or two of Royal Muscadine.

This house is worthy of a note both by its construction and the highly promising state of the Vines. The building is span-roofed, and is heated and ventilated on the first principles of constructive art. Even in the coldest weather the entire air of the house can be changed in a few minutes without the slightest danger of the Vines receiving a check or the temperature being materially lowered. The external air is admitted at the front of the house by a series of pipes conducting it to cylinders round the hot-water pipes, from whence it passes to the house in a warmed state. Its egress is by the rafters, these, in fact, being ventilators, which can be opened at will to any required extent, ensuring a circulation of air quite regular all over the house. This system of ventilation, which was so highly regarded by the late Mr. R. Fish, is beyond all doubt well suited to the cultivation of Vines, as the stout and exuberant foliage and the regularity of the crop in Mr. Ormson's house prove conclusively.

It is beginning to be perceived that the close glazing of modern structures is not the most favourable for Grape-production unless the greatest care is employed in ventilating, and it is not at all uncommon to find Grapes of the finest quality and of the highest finish in what are termed "rickety" old houses where the air circulates through the roofs as through a riddle. The drawback to such houses is that they admit water when it is not wanted as well as air; but in the rafter mode of ventilation the water is excluded and the air admitted, and thus a roof is provided meeting the requirements of the Vines—that is, a roof affording them perfect shelter and a regular current of air at all seasons when required. Much experience and unusual facilities for observation have led me to the conclusion that a prime source of failure in Grape-produce-

tion is traceable to deficient or imperfect ventilation, hence I notice this mode, which answers its purpose so well. A small garden may, and often does, afford hints as useful to the visitor or reader as a large garden, and certainly Mr. Ormson's house shows a system of perfect ventilation in hot or cold weather, and Vines which speak approvingly of the treatment which they receive. The plan noted, of admitting warmed air, is only subsidiary to the regular system of top and bottom ventilation, and in order to change the air in inclement weather, which is of the greatest importance during the early and cold season, when forcing must be carried on.

The routine treatment which these Vines receive is of the best. They are never syringed, but every portion of the house, paths, stages, &c., are regularly moistened, and this keeps the foliage perfectly clean and healthy. The border is well made and drained. It is top-dressed with manure and watered with manure water at intervals according to the state of the Vines and the weather, and it is by this practice that the Vines, as they must do, look so well.—A VISITOR.

ARRANGEMENTS FOR EFFECT AT FLOWER SHOWS.

THAT the attractive arrangement of plants at exhibitions contributes greatly to the effect of such gatherings is generally admitted, but it is just possible that the system—if system it may be called—is being carried to an extreme, and that effect is occasionally if not frequently produced at the sacrifice of convenience if not of something more important. The modern plan of arrangement often renders the work of judging exceedingly onerous and difficult; in fact it is at times almost impossible that the judging can be satisfactorily performed by the most competent adjudicators. It is certain, too, that those whose duty it is to provide the public accounts of the great exhibitions have exceedingly difficult tasks to perform in describing the collections; and as to the public, they are quite bewildered in attempts to compare the merits of the collections, in the different classes.

This arises solely from their wide, and as many consider their needlessly wide, distribution. So widely are the different collections in the same class apart that it is almost impossible to balance their merit; indeed, no small confusion is occasionally caused by the wandering to and fro of visitors in seeking out the different exhibits. It may be in some degree artistic that the first-prize collection a group of Ferns be placed in one corner of a tent or building, and the second-prize collection, be in the opposite corner 100 yards distant, and the third-prize group as far as possible apart from these fortunate "twelves" or "sixes;" but after all that can be said in favour of the plan it is violently artificial—a sprinkling and dotting, not to say patching, system for which Nature affords no parallel.

There is a vast difference between arranging the plants of a given class in unbroken lines and then following with the representatives of another class until the schedule is exhausted, and the unreasonably wide distribution of the competing groups. Surely an agreeable effect can be produced by grouping the Ferns, Azaleas, Orchids, &c., artistically, and still keeping the collections sufficiently near together that they can be judged readily and justly, and especially that the public may do what they so greatly desire—compare with each other the prize collections. By the present mode of arrangement this is impossible, and the result is endless inquiries by visitors for collections of plants which can hardly be found.

A flower show should certainly be artistically arranged, but it ought also to be convenient and enjoyable, and unless these desirable features are blended the show is not complete.—A JUDGE.

NARCISSUS POETICUS.

I enclose single and double flowers of a hardy bulb, if you will please to name it. I desired in the middle of April some *Eucharis* blooms, and tried at a large grower of the same, but could only get two flowers. I also tried all over London, but could not obtain any in Easter week. Now, I think if this single-flowering bulb could be brought into bloom about that time it would take the place of the *Eucharis* for weddings, also for church and grave decorations.

The enclosed is the last single flower I can find in the borders. It is very valuable on account of the long time it will keep in water. I cut buds just bursting, and place them in water with other flowers, and was surprised to find them open

into this beautiful sweet-scented flower. The same flowers kept fresh a month in water. The double variety comes in after and takes the place of the single. It is equal to it in all its qualities, and I think might take the place of the *Gardenia* for scent. Do you know if they flower every season? as I have not noticed them before so full of bloom, though my clumps are large and many. I should like to know also if it is a common flower or wild. My employer found one of the doubles growing in a field some distance from here last week.—J. D.

[The *Narcissus poeticus* is a native of the south of Europe, and those found in a field must have escaped from a garden. It produces flowers annually, and is so well known that we should not have thought it needed this notice, except for the suggestion that it might be used instead of the *Eucharis* for decorations. This *Narcissus* is grown by the acre for affording out flowers for the London market.—Eds.]

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

INSECT pests where they are not assiduously destroyed give much trouble at this season, a time, too, when the whole strength of most establishments is strained to the utmost to keep the gardens in good order. Aphis has attacked the Plum and Cherry trees on the walls, and if we do not destroy this troublesome enemy it will either destroy the trees or seriously injure them; and we are very much afraid that it is easier to give advice as to how the trees are to be cleaned than it is for those whose trees are affected to find time to clean them. The insects are generally found on the points of the young growths, and before nailing them in to the wall the shoots may be dipped into some insect-destroying solution. There are plenty to select from, but we always make our own. Three ounces of soft soap dissolved in a gallon of water with half a pint of tobacco liquor will be strong enough; but it is best to test the mixture first to see whether it is too strong, when it might kill the leaves; or it may not be strong enough to kill the fly. One or two shoots should be dipped in and left for an hour or two, when the fly would be dead and the leaves uninjured if the solution is as it ought to be. If the insects are still alive add a little more soft soap. The best way to use the solution is to fill a hand-basin with it, then hold the basin in one hand and bend the shoot into it with the other.

The caterpillars of the *Bombyx neustria* or Lackey Moth where they were not destroyed in a young state are now to be seen in large clusters. If they are disturbed they suddenly let themselves down by a slender thread to the ground or some other part of the tree. The twig on which they cluster may be very gently cut, or the caterpillars may be destroyed by seizing them quickly with the hand. Before they are full grown they spread through the tree, and it is very difficult to destroy them. Nothing is so effectual as hand-picking.

We continue to attend to the wall trees, nailing-in the shoots and removing those not required. This is necessary to allow the sun and air to act upon the fruit; but no garden has a tidy appearance when the young growths are hanging loose on wall trees. Continue to syringe the trees as often as they may require it. When the weather is hot and dry and the nights warm, Peach and Nectarine trees on walls ought to be syringed every morning if there is time to do it. We have not looked over the bush and pyramid trees yet, but it will be necessary to do so very soon, and in this case also it is best to thin the growths well out.

Strawberries have been looked over, and the hoe run through the ground before it was covered with the runners. We hear of rain in different parts and at no great distance from us, but very little has fallen here. The ground is dry, and to have good fruit it must be well watered and a mulching of manure be laid over the ground to check evaporation. We shall very soon lay runners of Black Prince and Keens' Seedling into small pots for early forcing. The sooner they become established in their fruiting pots so much earlier they can be started next season.

We have seen and tried many different plans to preserve the fruit from injury and to prevent it from coming in contact with the ground. The mowings from the lawn have been used to place under the fruit, but this is about the worst that can be used, as the small portions of grass stick to the fruit and are with difficulty removed. Clean straw is about the best material to place under them, but all such contrivances are not to be compared to the plan of placing small branchlets round the plant with the end stuck in the ground so that the fruit hangs over the forks of the branches. It does not touch the ground, and is also very freely exposed to the air, and the sun acting upon the fruit gives it a high colour.

VINEYARDS.

The fruit is now quite ripe in the early houses, and all that is required to be done is to see that it is preserved from dust and

not allowed to shrivel from an arid atmosphere in the house. Another cause of the fruit shrivelling after it is ripe is dryness at the roots, and this not only injures the present crop but it prevents the buds from swelling-up for next season. If the borders have been well watered up to the time that the fruit commences colouring there is not much danger of injury from this cause; but from the time the Grapes begin to colour until that of the last bunch being out may include a period of more than three months, it is just possible that a shallow border of light soil may become dusty dry in less than that time, and it will be well to examine it. Should the Grapes shrivel, of course a good watering with clear water will be necessary. When all the fruit has been out, the Vines must be thoroughly syringed to free them from any trace of red spider.

We are now thinning the fruit in late houses, and shall finish before this appears in print. Artificial heat had been applied from the time the shoots had grown a few inches. It is a good plan to push on such sorts as Lady Downe's and the rest of the late sorts, for if heat has not been afforded early it will be necessary to apply it earlier in the autumn to ripen the Grapes than otherwise would have been the case. We shall not use artificial heat from now until the second or third week in August, or later even than this, according to the season. When cold nights set in, the fruit, if it is not ripe previously, will not be well flavoured unless the temperature is kept up to 80°, with air admitted by night and a dryish atmosphere in the house. Muscats when ripening require 65°.

The late vinery borders require plenty of water just now, and Vines can stand manure water as strong as most trees or plants. Guano may be strewn upon the ground pretty thickly, or a coating of manure 2 or 3 inches thick may be placed upon the surface in addition to the usual dressing that was applied in the winter. This is a more convenient way of feeding the Vines than mixing up the manure with water in tanks or waterpots before applying it. In training the growing shoots of Vines see that they are arranged regularly over the trelliswork, and all the growths should be brought down under the wires. Vines pruned on the short-spur system soon make sufficient wood, and the growths are usually all trained into their places before the Grapes are in flower.

CUCUMBER AND MELON HOUSES.

The treatment in these structures varies so little all the year round, except that the changing temperature from winter to spring, and from spring to summer and autumn, make a less degree of care and watchfulness necessary in the warmest months. Artificial heat is not necessary now, unless to hasten the ripening of the fruit of Melons, or to have Cucumbers in at a certain time. It is a good time now to plant-out Melons to produce ripe fruit in September or about the end of August, and this may be done without any other heat but that from closing the house early. The plants are usually very strong, and are not so liable to be attacked by red spider when artificial heat is not applied. Cucumber plants should be very freely syringed when the house is closed. It should again be damped in the morning when the ventilators are opened, and besides this no other moisture is required. To have the atmosphere constantly charged with moisture is not conducive to the health of Cucumbers or any other vegetable products. A high moist atmosphere causes a rapid growth, but it is not a healthy one; the leaves are always wanting in substance, and will not endure a few hours of bright sunshine. Cucumber and Melon plants ought not to require shading from sun; when they do the treatment is probably at fault, and the most common cause is an overmoist atmosphere.

PLANT STOVE AND ORCHID HOUSES.

Here as in other structures but very little artificial heat is required; but it is better not to do without it entirely, as many plants are making rapid growth or maturing the young wood; and the season so far has been unusually late. Many plants that have usually passed the flowering period at this time are not yet in bloom, and if the weather does not become warmer we shall not be able to dispense with fire heat at all. *Stephanotis floribunda* is still in flower, but as soon as the flowering period is over the growths should be exposed more to sunshine. This plant may be trained close to the glass and fully exposed to the sun at this season. This and *Allamanda* should be well syringed daily to keep down red spider. There is little danger of injury from damp at this season, and nearly all stove plants except those that have tender foliage may be syringed. Young plants are potted-on as they require it, and any choice plants that are not growing so well as they ought must be examined at the roots to ascertain the cause. If it is from the potting material becoming sour this is to be removed with a pointed stick from amongst the roots, and the plant repotted in the same or smaller pot in suitable soil.

Many of the Orchidaceous plants that are starting into growth ought also to be repotted: the best time to do this is when fresh roots are emitted from the base of the last growth. Red spider is a troublesome pest to many of the East Indian Dendrobiums, *D. Bensoniae*, *D. Devonianum*, and *D. Falciforme* especially; all

such plants ought to be freely syringed with tepid water daily, this will prevent the spider from appearing. Sometimes the plants are in a position where the use of the syringe is injurious to other plants. In this case the spider may be washed off with a sponge and soapy water, or the plants may be taken down and occasionally syringed.—J. DOUGLAS.

TRADE CATALOGUE RECEIVED.

Robert Parker, Exotic Nursery, Tooting.—*Catalogue of Alpine and Herbaceous Plants, Ferns, Climbers, and Fruit Trees.*

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

IPSWICH.—June 15th, July 6th, and September 17th. Sec. Mr. W. B. Jeffries, Henley Road, Ipswich.

EDINBURGH (Scottish Fanny Society's Show). June 16th. Mr. N. M. Welsh, 1, Waterloo Place, Edinburgh, Sec.

CRYSTAL PALACE (Roses). June 16th and 17th.

COVENTRY. June 19th. Mr. T. Wilson, 5, Portland Terrace, Sec.

REGENT'S PARK. June 21st.

SPALDING. June 21st. Mr. G. Kingston, Sec.

FARNHAM AND SOUTH HAMPSHIRE. June 21st. Mr. H. Smith, Sec.

KENTON (Roses). June 23rd. Mr. T. W. Gray, Hon. Sec.

REIGATA (Roses). June 24th. Mr. J. Payne, Treasurer.

BURTON-UPON-TRENT. June 26th. Mr. F. S. Dunwell, Sec.

MAIDSTONE (Roses). June 28th. Mr. Hubert Bensted, Rockstow, Maidstone, Sec.

COLCHESTER. June 28th and 29th. Mr. W. Harrison, Sec.

LEEDS. June 28th, 29th, and 30th. Mr. James Birkbeck, Delph Lane, Woodhouse, Leeds, Sec.

RICHMOND. June 29th. Mr. A. Chancellor, Hon. Sec.

WEST OF ENGLAND (HERRARD). Roses. June 29th. Rev. C. H. Palmer, Credenhill, Sec.

WIMBORNE (Roses). June 29th. Mr. C. Parker, Hon. Sec.

TORRBY. June 29th and 30th. Mr. W. Fane Tucker, Capt., Braddon Tor, Hon. Sec.

OXFORD (Roses). June 30th. Mr. C. R. Bidley, 115, Aldate's, Hon. Sec.

BROCKHAM (Roses). July 1st. Rev. A. Cheales and Mr. C. Mortimer, Secs.

MARSDEN. July 1st. Mr. J. H. Edmondson, Hon. Sec.

SOUTHPORT. July 5th. Mr. A. Campbell, Sec.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY. July 5th and September 18th.

OUNDE. July 5th. Mr. Alfred King, Sec.

WESTMINSTER AQUARIUM. July 5th and 6th.

FROME (Roses). July 6th. Mr. A. B. Bailly, Hon. Sec.

NEWARK (Roses). July 6th. Mr. F. B. Dohney, Sec.

NOTTINGHAM. July 6th to 10th. Mr. A. Kirk, Municipal Offices, Sec.

SANDOWN PARK. July 7th and 8th. Mr. Wills, Royal Exotic Nursery, Onslow Crescent, South Kensington, Sec.

ALEXANDRA PALACE. Roses, July 7th and 8th.

WELLINGBOROUGH. July 7th and 8th. Mr. W. B. Parke, Hon. Sec.

EALING, ACTON, and HANWELL. July 11th (at Fordhook). Mr. R. Dean, Ealing, Sec.

ENFIELD. July 12th. Mr. J. T. Boff, Bloomfield Nursery, Sec.

HELMERSBURGH (Roses). July 12th and 13th. Mr. J. Mitchell, Sec.

WIMBORNE. July 12th and 13th. Mr. P. Appleby, 5, Linden Cottages, Hon. Sec.

HIGHGATE. July 13th. Mr. W. M. Bürok, 6, North Road, Highgate, Sec.

CLIFTON, BRISTOL (Roses and Strawberries). July 13th. Mr. J. T. Jackson, Sec.

LEEK (Roses). July 13th. Mr. S. Cartwright, Sheep Market, Leek, Staffordshire, Hon. Sec.

KILMARNOCK. Roses, July 13th and 14th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.

TONBRIDGE. July 19th. Mr. W. Blair, Hon. Sec.

ROYAL HORTICULTURAL SOCIETY, SOUTH KENSINGTON. July 19th and 20th (Roses, &c.). November 8th (Fruit).

TAWNESTOWN. July 25th. Mr. P. Moore and Mr. H. J. Cochrane, Hon. Secs.

WREKHAM. July 25th. Mr. J. B. Shilley, Hon. Sec.

HUNTINGDON. July 26th. Mr. J. Dille, Market Place, Sec.

HEADINGLEY. July 26th and 27th. Mr. T. Atkinson, Burleywood, Headingley, Leeds, Sec.

ABERDEEN (Royal Horticultural Society). July 26th, 27th, and 28th. Mr. Archibald J. Binnie, 128, Union Street.

BRIGHTON. July 29th. Messrs. C. Jessop & E. Rawnsley, Hon. Secs.

KILBY (Flowers). August 1st. Mr. C. E. Bracebridge, Sec.

KILBY (Horticultural). August 2nd. Mr. R. H. Feltos, Hon. Sec.

HAUNSTALL (ROSEDALE). August 4th and 5th. Mr. M. J. Lonsdale, Sec.

SOUTHAMPTON. August 5th and 7th. Mr. C. S. Fudge, 89, York Street, Sec.

TAUNTON DRANE. August 10th. Mr. F. H. Woodforde, M.D., and Mr. Clement Smith, Hon. Secs.

FILEY. August 11th. Mr. Walter Fisher, Hon. Sec.

OTLEY. August 12th. Mr. Alfred Suttle, Hon. Sec.

OLAY CROSS. August 15th. Mr. J. Stallard, Olay Cross, near Chesterfield, Sec.

WHITON-SUPER-MARE. August 15th and 16th. Mr. W. B. Frampton, Sec.

FRETON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.

SHREWSBURY. August 16th and 17th. Admitts & Naunton, Hon. Secs.

MIRFIELD HORTICULTURAL. August 19th. Mr. George Senior and Mr. John Rushforth, Hon. Secs.

NEWBURY. August 22nd. Mr. A. Stradling, Northbrook Street, Hon. Sec.

CHESTNUT. August 23rd. Mr. B. Thorne, Hon. Sec.

CARSHALTON, WALLINGTON, and BADDINGTON. August 24th. Mr. J. Barnes, Leicester House, Carshalton, and Mr. W. Clark, the Nurseries, Wallington, Hon. Secs.

SHAYTON BURN. August 26th. Mr. R. Richardson and Mr. W. Elliott, Secs.

ISLE OF THANET (MARGATE). August 30th. Mr. C. D. Smith, 8, Marine Terrace, Margate, Sec.

MONTROSE. September 1st and 2nd. Mr. Alex. Burnett, 3, High Street, Sec.

DUNDEE (International). September 7th, 8th, and 9th. Mr. W. R. McKelvie, 30, Euclid Crescent, Sec.

GLASGOW. September 12th and 13th. Mr. F. Gih. Doughall, 167, Canning Street, Sec.

NORTHAMPTON (Chrysanthemums). November 14th and 15th. Mr. W. Gutteridge, 51, Denmark Road, Northampton, Sec.

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

COTTAGERS' PLANTS FOR EXHIBITION (H.).—We apprehend the competition will be confined to plants which may be grown as window plants. We should have *Fuchsia*—Sunray, *Mrs. H. Cannell, *Purple Prince, and Grande Duchesse Maria. Zonal or Nougay *Pelargoniums*—*Amaranth, Lustre, and Polly King. Double *Pelargonium*—*Madame Lemon. *Petunias*—Diamond and *Lady Moncrieff. *Hydrangea hortensis, *Lantana maculata*, and *Vallota purpurea*. We should grow the whole and select the best in condition, and have a plant or two of *Lilium auratum*, and a *Carnation* and *Ploete*, or confine yourself to the half dozen, for which we have marked some with an asterisk.

PERFUMES (R. B. E.).—We will obtain some information, but it is a subject which few persons can write about.

PEAS IN TREACHERS (St. Edmund).—Do not earth them, but place the sticks on each side of them when the Peas are 3 inches high. Soak them occasionally with guano water of a strength of half an ounce of guano to each gallon of water if the weather is dry. The guano may be dissolved in the water and applied at once. Much depends on the weather as to the time of the Peas being ready to gather.

SHEDDING GERANIUM (Mrs. Peale).—Being white and so dwarf as to be suitable for an edging, show it to some of the leading florists, they being likely purchasers.

VINE LEAVES (A. Reed).—They are not attacked by an insect; the eruptions are a symptom of over-luxuriance.

INSECT ON VINES (Y. Z., Bristol).—It is a weevil, *Curtulio sulcatus*. The best mode of subduing them is to spread a white sheet beneath each Vine at night, shake the Vine, and destroy the weevils that fall on the sheet. This repeated twice or thrice will enable you to exterminate them.

PINN SAWDUST (B.).—Mixed with the dung of cows we do not think it would injure any kitchen-garden crop.

APPLYING ARTIFICIAL MANURE TO VINES (Amateur).—It is quite wrong to overcrop Vines and then fancy that you can make up for it by feeding them with guano water. We always scatter the guano on the surfaces of the borders, and allow the fertilizing properties to be washed in by repeated waterings. Vines will stand the manure water pretty strong. Three gallons of water and 8 ozs. of guano is not enough for a Vine if it is planted out. We give a border 16 feet by 88 feet about 14 lbs. of guano and 260 gallons of water at one time. You may do yours in the same proportion, but you must avoid the evil of overcropping.

VINES UNHEALTHY (Northumbria).—It would be much better for you to plant new Vines. If you were to plant healthy growing canes now they would become established by the autumn.

ARALIA LEAVES SCORCHED (J. W. L.).—The leaves are scorched by one of three causes—their being exposed whilst wet to the powerful rays of the sun with a deficiency of air; allowed to flag for want of water, the tissues of the leaves being dried up; or excessive fumigation with tobacco. We think the second is the most likely cause in your case, as you say some of the plants are affected but others not at all, though the growths being young and tender in the case of the scorched plants would make a difference between those with foliage more advanced or not started into fresh growth, the latter escaping injury when those with tender growth are injured by tobacco smoke. You will now be able to determine for yourself and provide the remedy.

ERADICATING DOCKS AND DANDELIONS (T. D. H.).—We know of no wholesale mode of riddance of these weeds from lawns, nor have we any faith in any dressing which would kill them without also doing injury to the grasses, but all coarse weeds may be removed by dropping into the heart of each weed oil of vitriol. It should be applied with a stick notched round for an inch or two at the end the better to hold the liquid, one dip of which will hold enough to kill three or more plants, one drop being sufficient if the soil be good; the vitriol hisses in burning up the weeds. The sticks should not be pointed, the bottle having a wire round it for convenience of carrying. It is of course needful to entrust the vitriol and its use to a careful person.

ERRATA.—In "Cornish Notes" on page 448, the question appears, "Is there any chance of propagating *Rhododendrons* without peat?" It should have been "without heath." In the same article the Apple referred to as "Winter" Peach should have been Irish Peach.

CHERRIES DROPPING (Amateur).—It is a consequence frequently of dryness at the roots during the flowering season; but in your case it arises from overfullness; the fruit, were it not to drop considerably, would overcrop the trees and could not be brought to perfection.

ROSES AFTER FLOWERING (Idem).—Plunge the pots in ashes in an open yet sheltered situation, keeping duly supplied with water, re-potting in September. Read Mr. Douglas's notes on "Roses in Pots," page 401.

CUCUMBER PLANTS DYING (Oswin).—The plants die at the collar owing to a too rich and moist soil, the stems of the plants being often wet, or shaded so as not to become dry, the atmosphere being close and moist. Sulphur applied to the affected parts is useless, but quicklime from drying the part is to an extent useful, but the remedy lies in a less moist and rich soil, with freer ventilation, so as to prevent the accumulation of moisture upon the

stems. We presume there is no drip from the roof. In syringing avoid wetting the stems. There is no reason why the plants in the other house should be similarly affected if you have a better ventilated atmosphere. Turfy loam is quite rich enough without any addition of dung.

PLANTING FLOWER BED (Biceps).—Of your proposed planting of the bed the first-mentioned plan would not suit with Golden Pyrethrum in the centre, it would be too dwarf; and 8 should be divided from 4 by a band of Centaurea. The second mode of planting is best, with the plants at your disposal. The dwarf Lobelia and Christine Geraniums might be advantageously used to take off the flatness of the Pyrethrum and relieve its monotony, dotting them alternately and equidistant in the band of Pyrethrum.

MIGNONETTE EATEN BY FLY (Idem).—The "flea" is a weevil—the Turpin fly, which may be kept under by dusting the plants in the morning or evening with quicklime. Repeat the dusting if rain washes away the lime, but with moist weather the plants will soon pass the insects, which are most prevalent and destructive in dry weather.

CUTTING OVERGROWN BROOM (Roberton Wathen).—The best time to cut down Broom is before it commences growing and flowering in March or April, but it will probably start into growth again if cut immediately, not cutting too closely into the old wood.

GROWING MELONS (W. Nadir).—The best compost for Melons is a strong turfy loam—the top 8 or 4 inches of a pasture, with its turf laid up in ridges for three months onwards, and chopped up moderately fine. No manure should be added. The compost should be 18 inches deep, and ought to have efficient drainage. A temperature of 85° at night, not exceeding 70°, nor less than 60° in the morning, and 70° to 78° by day without sun, rising to 85° or 90° with sun and air, the latter being admitted and withdrawn at 75°, will be suitable. The temperature of the bed should be 75°, but we cannot say what temperature you will require in the chamber beneath the border to give you the required temperature in the bed. That you will need to determine practically. The atmosphere of the house requires to be kept moist, except during the setting of the fruit and when it is ripening. At other times you will need to sprinkle the plants twice a-day, and at noon damping well the house but not the plants.

CUCUMBERS FAILING (A. B. C.).—We think your soil is too rich—one of the greatest errors made by Cucumber-growers. "Three parts well-rotted pig's manure to one part yellow loam," and the placing of the pig's manure in pans so as to receive night soil, is only making the soil richer. Good turfy loam without admixture of dung is sufficiently stimulating, but you have three parts of manure to one of soil; and were the quantities reversed we should still object to the compost as too rich unless the loam were poor, when one-fourth of manure might be added. It is so easy to apply manure in a liquid form and as top-dressings, that we do not advise a rich soil, as with watering it is liable to become sour—a soapy mass, which may give gross but not fruitful growths. Cease the manure waterings, and do not stop so closely. We do not think there is anything wrong in the treatment otherwise than in the soil.

PINK BLOSSOM NOT SETTING (F. J.).—The embryo fruit has undoubtedly been injured by the severe and long-continued cold. We never had a greater show for fruit, but the blossom was in many instances destroyed, and in most instances damaged, the anthers and pistils being killed, so that although the flowers expanded fertilisation could not take place, the embryo fruit consequently dropping. Protection is the only remedy.

STOPPING LEADING VINE SHOOTS (Idem).—We should stop the shoot in your ground vine at 4 feet, which we presume is the extent of the space at command, and stop the laterals at the first leaf, and afterwards to one leaf as they are made. If you have more length for the leader there is no objection to its growing twice the length named, the chief point being to have the part to which you cut firm and well ripened. There is no need for syringing Vines in a ground or any other vine, but it is necessary that a moist atmosphere be maintained. In a ground vine sufficient moisture will be derived from the soil, except, perhaps, in long-continued hot weather.

REMOVING STRAWBERRY RUNNERS (Idem).—We have and do advocate the removal of runners from Strawberries as they appear—that is, from those not required to give plants for increase, when, of course, the first runners ought to be retained and layered to facilitate their speedy rooting. The runners if left to root impoverish the soil. Besides they by their shade prevent a free circulation of air, the foliage of Strawberries requiring to be fully exposed to light and air.

PELAGONIUM LEAVES SPOTTED (W. B.).—There is no trace of insects though there may have been insects at an earlier stage, but in that case there would have been evidences of their attacks remaining. The spots are a result of a too close moist atmosphere, which freer and earlier air-giving would prevent. We presume the plants have not been syringed, or that would cause it.

ROSE "ADMIRABLE" (Kitty).—You will be fully justified in increasing to any extent the Rose of that name. Go on propagating.

GLOIRE DE DIJON ROSE EXUBERANT (Garrick).—As you say the Rose is flowering sparsely we should advise you to cut away some of the old wood and make room for the laying-in of at least a portion of the vigorous shoots now pushing; these, if thinly trained and matured, would in due time produce fine flowers. The forefront shoots not required for training-in, or which cannot be conveniently trained to the wall, should be removed at once. This, like some other Roses, produces the finest of flowers from young wood trained thinly and matured, and not materially shortened. You must provide against your Rose becoming bare at its base by shortening the shoots at different distances from the ground at the winter's pruning.

VINE ROOTS DISEASED (J. F.).—We planted three vineries some eight or ten years ago, and the second or third season many of the roots presented the same appearance as yours do. A friend planted a house at the same time, and the Vines were also checked in their growth by decaying roots. A box was also sent to this office containing roots affected in the same way, and in each case the borders were made up as yours has been, except that the bones were not raw. As your Vine has not started at all, or but very little, it may have been an unhealthy cane. Raw bones and fresh stable manure coming into contact with the roots of such a plant would be certain to make it worse. There is no trace of Phylloxera. You had better plant another healthy Vine, but instead of allowing the soil of the border to come in contact with the roots make a good-sized hole and plant in decayed turfy loam; the young fibres will form in this, and work into the richer compost beyond.

VINE AND NECTARINE LEAVES DISEASED (W. S.).—Your Vine leaves are slightly injured by deficient ventilation and an overmoist atmosphere.

Having plants in the house you may be unable to reduce the moisture, but you can increase the air; leave the top ventilators slightly open all night, admitting more air very early in the morning. The Nectarine leaves are severely blistered by the action of cold winds on the tender foliage. Remove the worst leaves now, and milder weather will induce the production of healthy foliage. Keep the leaves free from insects.

STOVE IN GREENHOUSE (Otto).—Being fuelless it would certainly injure your plants.

NAME OF INSECT (Ignoramus).—Cetonia aurata, the Rose Chafer. It is perfectly harmless, and is not common.

NAMES OF PLANTS (G. H. V.).—It is not a Linaria, but Ranunculus arvensis. (J. H.).—Fritillaria pyrenaica and an Epidendrum. The exaggeration of the Polyanthus calyx is not unusual. (J. H. Hindley Green Hall).—Calliandra Tweedell. (M. H. M.).—A variety of Tulipa Gesneriana; Narcissus poeticus flore-pleno. (W. L.).—1, Asperula odorata; 2, Staphylea pinnata; 3, Meconopsis cambrica. (G. L.).—Wiegelia rosea and Daphne pontica. (A Ten-years Subscriber).—1, Adiantum hispidulum; 2, Nephrolepis cordifolia; 3, Pteris cretica albo-lineata; 4, Polypodium aureum; one Fern not in fruit and Adiantum tenerum not numbered. (Mrs. H.).—1, Symplytum; 2 and 3, Trollius europaeus; 4, Asperula taurina; 5, Saxifraga cespitosa; 6, Heuchera species. (Lady C.).—Cactus phyllanthoides, Rose-flowered Indian Fig. (A. B. G.).—Staphylea pontica. (W. T.).—Corydalis lutea. (J. W., Lichfield).—Mimulus glutinosus. (Old Subscriber).—1, Spiraea rotundifolia; 2, Saxifraga granulata flore-pleno; 3, Limnanthes Douglasii. (J. S. H.).—Limnanthes Douglasii, a gay-flowering hardy annual introduced from California in 1838, and not a "weed."

POULTRY, BEE, AND PIGEON CHRONICLE.

MANAGEMENT OF CHICKENS.—No. 1.

HOWEVER bad the season hitherto has been for many of us, there are many broods in a growing stage, and consequently a few hints upon their management and feeding may be useful. We shall not attempt to write anything new, knowing that the subject has been ventilated thoroughly from time to time; still we know that we have even since last season many fresh poultry-keepers among our subscribers who will be glad of any ideas which are new to them though old to us; and even amateurs of two or three years' standing will not object to have their knowledge refreshed, for this and the two coming months are not only very important but frequently very critical. There is no doubt that good chickens are scarce—we mean good early birds—and we are quite sure that this will be realised soon enough. So it is more than ever important, then, to make the most of our broods now, even though they may be lately hatched.

To begin then. Those who have only enclosed yards and no grass field or orchard for their chickens to run in, should dig-up those yards at least twice a-week and raise-up mounds with the soil. The hen and her chickens will delight in levelling them, and find innumerable edible morsels in them at every time; and if grains, or ants' eggs, or maggots can be buried among the soil of these miniature mountains so much the better, for to keep young chickens continually on the scratch is most important. Once they are allowed to be idle hour after hour on a dry and hard run, and only have their proper feeds at certain times to daintily pick at, they will never do well. They will lose brightness, and look mopeish and droop their wings, and then we know all is over with them. Chickens must be continually employed. A handful of wheat or hemp in a lump of straw will do them, when confined, as much good as two feeds of the best ground oats when thrown down on a hard and bare run. Chickens must never be allowed to mope or be idle, for they should be kept continually exercised. Then, again, for chickens in confinement the meals must be varied and various. The menu cannot be too much changed. Boiled vegetables with the meal mixed-up dryly makes excellent feeding stuff; bread crusts and broken biscuits soaked in skim milk make chickens grow wonderfully fast. We always like to use soft foods in the daytime. A handful of some good grain at noon will not hurt them, but if allowed to feed too heartily before it they are apt to lose their appetites. Green food we believe immensely in for chickens in confinement. Lettuce leaves and lawn mowings finely minced-up and mixed with some soft food, with a sprinkling of Spratt's food will often induce chickens to eat when nothing else seems to tempt them. Spiced foods and aromatic compounds we do not at all care for for young stock. We think they do more harm than good, however useful they may be for stimulating laying in adult birds. Chickens so fed seldom make fine specimens, but become matured when they ought to be growing, and develop combs when the birds ought to be making flesh and bone! Now is the time to choose out any imperfect specimens—birds with evident malformations of comb, legs, or shape—for more harm is done with overcrowding in small yards than is ever done by anything else. We feel quite sure if fanciers with limited space tried to produce ten chickens where now they endeavour to get thirty, not only would there not be so many miserably grown objects in every small establishment, but the prices generally would be better and the runs sweeter and more wholesome into the bargain. The prices birds are now fetching, save in rare instances, are very meagre, and we do not

hesitate to think one of the principal reasons is that so many half-grown, wisen-faced-looking chickens are annually allowed to live and are daily offered for sale, so the market becomes overcrowded and choked with perfect rubbish. Now, we repeat, is the time to thin before the runs are contaminated, diseases are bred, and the corn bill is run up.

Water, too, is as important an item in the chicken's menu as ever the best wines are at our own great feasts. Chickens must have clean water, and they must have fresh water. We do not mean that stale water would kill a chicken, but when birds are wanted for the exhibition pen no pains must be spared to produce them up to the mark. Water which stands from morning to morning does them harm. Rain water which is allowed to stand in the water-tub does them harm. Water which can be found by the chickens in stagnant puddles, or which drains from farmyards, does them harm. We like no pans so well as the circles of rings; they hold but little water, are easily cleaned, and afford no fear of the tiniest baby chick being drowned in them. We like when we can possibly afford the time to fill these pans and wait till the chickens have satisfied themselves, and then empty the pans again. This entails trouble, but we believe it would amply repay for it, and without trouble no real and permanent success can possibly be expected.

Some recommend meat very highly, and we believe many of our breeders do use it, but we would never give it to the birds as meat. We like to make a good soup of it and then mix-up the soft food with it. We are sure this is a better way than cooking the meat and giving it to the birds in pieces. Pot liquor in which mutton or veal has been boiled when used to mix-up the soft food makes the birds grow rapidly and thrive well.

Next as to the times of feeding. This must depend upon circumstances. For instance, the size and material of the runs, the breed of the birds, and the quality of the ground where there is plenty of space. We can lay down no definite list of hours, but can only emphatically say, the best rule is "little and often." We have now two grass runs with only a hedge between them, and yet in one of them a brood of chickens would almost find their own living, while in the other they would shortly starve. Some grasses and herbs seem especially suited for insect life, which after all form the most natural and best food for young chickens.—W.

TOULOUSE GEESSE.

A SOUTH WALES correspondent has given in your Journal of June 1st the number of eggs laid by a Toulouse Goose in his possession during the present season. The pure-bred Toulouse is an excellent layer, principally owing to its being a non-sitter. I have five Toulouse Geese, which in 1874 produced 255 eggs; in 1875 the number laid by the same Geese was 245, and four of these birds have up to the present time this year laid nearly 160 eggs, and are still laying regularly. They were bred in 1873, and are all prize-winners. As showing the difference between the pure Toulouse and the thorough-bred Embden, I will mention the fact that from three of the latter Geese I have only had 87 eggs during the present season, and, further, the Toulouse are still producing eggs, the Embdens having entirely ceased laying.—YORKSHIRE BREEDER.

POULTRY AND BEE NEWS AND QUERIES.

We hear that "open judging," which we wrote about a week or two back, is to be tried at Ipswich on September 26th and 27th; but as we see another Ipswich Show is advertised for December, of which Mr. W. B. Jeffries is the Hon. Secretary, so we conclude the latter is the old-established meeting. Much as we should like to see open judging given a fair trial, still we would recommend committees to be very careful at first how they offer points cups, for, as we stated when writing upon the subject, we fear open judging and points cups going hand-in-hand really might cause some trouble and give occasion for disputes.

At the coming Oxford Show there will be a class with four handsome prizes from £3 downwards for undubbed Game cockerels. The money is kindly guaranteed by Mr. Lewis Wright. We mention the subject thus early that breeders may not dub all their cockerels, but reserve some for this contest.

We hear there is a wish among one or two White Game breeders for classes for that variety. We should be sorry to see the variety die out, and would recommend their writing to the Secretaries of the Palace and Oxford Shows, guaranteeing so many entries in case of loss, and we think every facility would thus be afforded them.

We hear that several exhibitors have determined not to exhibit again at the Bath and West of England Society's Show of poultry unless some very different arrangements are made. We should earnestly suggest that they should think seriously of

letting the birds come in on the Monday and be judged on the Tuesday. The horticultural department was, we believe, so managed this year. We are convinced it would turn the Show into a great poultry meeting, for so many approve of the old pair-of-hen system, which for many reasons we regret to see so universally dying out.

The season which seems to have been so very peculiar for man, beast, and bird, has been extraordinary in the length of time which eggs have taken in hatching. We know of a sitting of Silky eggs in Surrey which were five days overdue, and then every egg produced a chicken; and we had a sitting of Cochin eggs hatch in a hedge five days after the time, and we could mention similar cases occurring all over the country.—W.

NEW BOOK.

The Illustrated Book of Pigeons. By ROBERT FULTON. Edited and Arranged by LEWIS WRIGHT, with Fifty Coloured Plates by J. W. LUDLOW. Cassell, Petter, & Galpin.

THE last number of this work, which has been issued about monthly for a little more than the past two years, has just reached me. It will form a companion volume to Mr. Wright's larger book on poultry. I am rejoiced to see that a work on fancy Pigeons should stand side by side, equal in every respect to one on fancy fowls. A few years ago there were poultry shows in abundance, but at which not a Pigeon appeared; now, wherever fowls are shown there also are Pigeons to be seen.

It is interesting to note how the press always rises to an occasion in this country. Thus, in 1848 I believe was the first Birmingham poultry show, in 1850 about the first handsome and large work on poultry was published, that by Messrs. Johnson and Wingfield. So in regard to Pigeons, as they have come to the front, notably at the Crystal Palace shows, works of magnitude and excellence have been written about them, particularly this volume by Messrs. Fulton and Wright. The advance in price of Pigeon books is also interesting to note, as marking the advance of the fancy from the poorer to the richer classes. Thus, in the "Gentleman's Magazine" of February, 1785, among "the Register of Books" is the following advertisement of the first book ever written on fancy Pigeons:—"Columbarium: or the Pigeon House, being an introduction to a Natural History of Tame Pigeons, by John Moore. Printed for J. Wilford. Price one shilling." Now the fancy has so advanced that in this year of grace 1876 comes out a work on the same subject price a guinea and a half. Oh, fanciers! raise your heads up high, for no stale jokes about your meetings at "The Pig and Whistle" will do now: You meet at a palace, and your literature is proportionately elevated in character.

Former works on Pigeons, particularly the earlier works, were filled chiefly with descriptions of the different varieties, how one sort might be known from another, and this rightly, for people in general did not know the names of the birds. When, however, Pigeon shows became the rage, as of late years, and birds were kept not for amusement only but for competition for prizes, another want arose—namely, how to breed exhibition birds. Now, there was in England one man who knew enough of all varieties to win in every class, and whose stock was the largest and best perhaps in the world. That one man was Robert Fulton—born a fancier, by taste a fancier, by trade a dealer in high-class Pigeons, and an exhibitor with success of every variety; his mind was stored with valuable Pigeon-knowledge as to the breeding and management of birds fit for exhibiting. More than that, no man can succeed as a fancier without an ardent love for the birds themselves. Robert Fulton has this love and this knowledge. Then there was a skilled writer at hand, Mr. Lewis Wright, who could put Mr. Fulton's knowledge into a form attractive to the general as well as to the special reader, and this he has done. Another requisite there was for the issue of a successful work—there must be accurate portraits of prize birds, to be pictorial standards to fit the letterpress, which must detail what prize birds should be. There happened to be a fancier-artist, whose pencil I believe first showed itself to advantage in the pages of this journal, Mr. Ludlow by name. He has illustrated the book, and has combined in the pictures point accuracy with artistic beauty, and the result has been a work which stands above every other, and will be received by fanciers as their authority, presenting as it does prize fancy Pigeons of this present period to its reader.

To give any analysis of the work would occupy too much space; however, I will say this much, the literary history of Pigeons is spoken of, quotations from many English writers are given, many of which had never been noticed before. Then follows capital advice about building Pigeon lofts of various sizes, illustrated by diagrams. Then each variety is taken in its turn, beginning with the high-class varieties on to Toys, and last, but not least certainly, Runts. If I must decide upon particular merits of any particular part, I would say the accounts of the Pouter and the Jacobin—Mr. Fulton's own especial favourites—are the best of all. Some may think that placing

the Barb among the high classes is a mistake. The honest way in which dishonest practices are exposed is most commendable. Whatever be the taste of a fancier, he will in this book find his favourites fully spoken of, be he high-class fancier, flying man, or feather fancier. A very valuable chapter on diseases of Pigeons is given, and a most interesting one entitled "Metropolitan Pigeon Societies and their History" concludes the work.

A separate word is due to the illustrations. The Blue Pouter and the Fantails are perhaps the very best. The Fantail never before had justice done it. The colour of the Almonds is the best yet. The Magpies, drawing, colours, and background all good. The white birds, save and except the African Owl, are less happy. The blue Carrier and the foremost Trumpeter in the picture—the black Mottled—one feels one must stroke, they are so well drawn and coloured. The yellow Dragon, Barb, and Jacobin are scarcely the colour of yellow feathers; but all the red and yellow birds in the latter numbers are of a much more natural colour, as the red Pouter and yellow Tumbler. The drawing of the Jacobin is all that can be wished; and the figure and colour of the Turbites is particularly happy. I do not know what the poor white Pouter has done not to have his likeness taken. I grant that he has no variety of colour; but he is the most graceful in shape as a rule of all Pouters. Mr. Ludlow has drawn all his Short-faces remarkably well, and in the last number he has done a very good turn to all beginners by his picture of Almond feathers, while the Dun Carrier in build and colour well finished the series.

Messrs. Cassell have of course done their part well in respect of paper, type, and general getting-up.—WILKINSON RECTOR.

CANARY MANAGEMENT IN OLDEN TIMES.

No. 1.

Of the twenty-five chapters which make up Mr. Hervieux's treatise on Canaries, one of them in particular may be of interest to those fanciers troubled with hens which are but indifferent nurses to their young broods. Not that I wish to encourage the feeding and bringing-up of young birds by hand, for no artificial mode adopted can be expected to work to so successful an issue as Nature can as to the proportions of food given and the number of times such food is supplied to the young broods by their parents. Experience has taught me to know that hen birds in particular vary much in the way they bring up their young birds, some of which, and even in the same nest too, may be strong and thriving, whilst others will appear puny and dwindle away, until at last they may be found dead and down-trodden at the bottom of the nests. One cause of this may so happen through the first-chipped birds becoming stronger and more vigorous, and thus coming in for the lion's share of the food from the crops of their parents. Although hen birds may, so far as the construction of their nests are concerned, show some power of discrimination as to the choice or sorting-out from their nesting materials the coarser kinds for the commencement or foundations of their nests, still over the rearing of their young all discrimination as to the feeding appears to be lost if their young be irregularly hatched. This, in my opinion, is the cause of the weaker birds "going to the wall"—an opinion gained by more than a quarter of a century's experience.

Mr. Hervieux appears to have been very precise in his way of treating the young birds when brought-up by hand, not only specifying the number of times, but the different periods during each day the birds should be fed. In his preface of the old work, with some confidence he backs-up his views by saying, "This Treatise will therefore be an improvement of all that has been said before on this subject, and an exposition of what has not been hitherto made very plain, being myself perfectly knowing in what I am going to write about the Canary birds."

The writer says in a somewhat lengthy chapter, from which I extract the following:—"I must tell them that the cause of death whilst they are rearing by hand, is their not being able to brook the negligent looking after them, for sometimes they are starved by the long interval between the times of feeding them, and sometimes they are surfeited by being fed too often and indiscreetly, and consequently young birds so irregularly reared grow sickly, which is thought to be for want of feeding, and then the keepers try all ways to make them open their beaks to swallow something, but all in vain, their stomachs being so full that they are choked-up, for nothing digests with them, and so having pined a few days, at last they die."

Birds ill-reared, either by their parents or by hand, are especially prone to sickness, and have great difficulty in casting their feathers during the moulting period. To obviate this, so far as the rearing of birds by hand is concerned, Mr. Hervieux has "fixed a rule for finding-out the proper hours, without being mistaken, when to feed the little Canary birds brought-up by hand, to the end that such regularity being observed, they may grow as strong and healthy as if they had been reared by their parents. The rules to be observed by

curious persons for feeding of their young Canaries are as follows—namely:—

"The first time at half an hour after six in the morning at the latest.

"The second time at eight of the clock.

"The third at half an hour after nine.

"The fourth at half an hour after eleven.

"The fifth at half an hour after twelve.

"The sixth at two.

"The seventh at half an hour after three.

"The eighth at five.

"The ninth at half an hour after six.

"The tenth at eight.

"The eleventh at three-quarters after eight, for the last time."

—GEORGE J. BARNESBY.

SWARMING IN 1876.

"To speak of early swarms is not to be thought of," says Mr. Shearer in the Journal of last week. He is, of course, speaking of the year 1876. On this remark I purpose to hang a few observations relative to this year's swarming and what it will probably come to. About here no swarms have yet been heard of, and it is now the 9th of June. It is, therefore, already full late even for prime swarms; and as the weather has suddenly become cloudy and wet, not to say cold, after a drought of six-weeks duration, it is not probable that swarming will commence till the latter part of the month or the beginning of July, in which case, if swarming goes on as usual, it will be all up with the honey harvest. I anticipate a good yield of clover honey this summer; but if the bees are in agitation at the time and dividing their forces by swarming, only a comparatively little of it will be gathered in.

In my own case I have resolved (if the bees do not wax restive and take the law into their own hands) to prevent absolutely their swarming till after the honey season, and to multiply my stock in August, taking care to do so before the destruction of the drones. This can be easily done as a rule by either plundering the stock hives of part of their honey stores from time to time as they fill them during the summer, or by giving them abundance of room. The enlargement of the hives by means of ekes is the surest way to prevent or postpone swarming; but it can be done by supers provided free access is given to such supers from every part of the main hive. In this way all the honey that can be gathered will be secured before swarming time, as numbers of bees in these large hives with overflowing populations will have nothing to do but to gather it.

I have made a beginning with my most forward hive. It is the strongest and largest of three which have alone survived the late disastrous winter out of ten which I had well fed up last autumn. I have given it a super of large size, equal, in fact, to the stock itself. Already it is half full of comb and promises well. I intend to eke it according to requirement, so as, if possible, to postpone swarming till the middle of July, when I shall be leaving home for a month. I hope in the few days before I go to manage my swarming with the best effect, and shall in due time report progress.

Of course feeding on a large scale will have to be attended to throughout the autumn to keep the late swarms alive; but sugar is cheap, and our apiarians are full of devotion. I intend, of course, to make my bees swarm artificially as circumstances shall guide me. There are many ways of carrying this out which an apt apiarian has recourse to.

As to Italian bees—(how long will they be called Ligurians, which is an entire misnomer?)—Mr. Shearer should have qualified his remarks by adding at the close "at least in Great Britain."—B. & W.

ARTIFICIAL SWARMING.

"DEAR SIR,—It would be indeed a great boon if Mr. Pettigrew or some other apiarian would kindly explain how bees are swarmed artificially, for in this part of the country there are many hives kept and mismanaged in the way described by Mr. Pettigrew in your last number; in fact I never heard of anyone within miles of this place who has ever taken honey without first killing the bees. Artificial swarming is out of the question; our ignorant bee-keepers won't believe it is possible; so if you describe it in your next issue it would be in time for this season, and be of great advantage to us.—JOHN OAKLEY, JUN., *Winchcombe*."

It is to be hoped that Mr. Oakley will, before the present season is over, become an expert in artificial swarming and driving bees, and thus be enabled to help his neighbours. The work of artificial swarming is very simple and easily understood. To do it once, or see it done, is to make anybody master of it; and everything of this kind fairly mastered becomes our servant; and, sure enough, artificial swarming is a very useful servant to all bee-keepers who have not time to watch their bees during the day.

Bees are ready for artificial swarming as soon as they begin to cluster about their doors, and to let them cluster long in fine weather is itself a piece of mismanagement. Large hives seldom

cluster outside before swarming, hence an internal examination is necessary to ascertain if the bees are ready for swarming. When a hive is ripe and ready for swarming two empty hives should be brought near to the place where it stands, also a tablecloth or piece of oilcloth, and a bit of fustian or corduroy (old) about 4 inches square, rolled together. By holding one end of the fustian to a red coal it is fired and begins to smoke. By holding the smoking and close to the door of the hive and blowing hard on it, all the smoke is driven in amongst the bees, which masters them completely. When the hive is raised off the board it will be found that the bees do not rise or attempt to sting. The hive should be inverted and placed on its crown a few yards from its stand, one of the empty hives placed on and over it, and the tablecloth rolled round the junction of the two hives to keep all the bees in. The other empty hive should be placed on the board to cover up the bees on it and gather in outsiders. Now for the drumming or driving process. This is done by beating on the full or bottom hive with the open hand for about four minutes. Bees enough to form a swarm generally run up in four minutes. The cloth is unrolled, and the swarm is placed on the board of the old hive. The cloth is spread over the combs and bees of the old hive, or it may be placed on another board at once. This is artificial swarming, which anybody may do in six or seven minutes. The swarm should be placed some feet or yards to the right of the old stand, and the mother hive as far to the left. If there be room enough to place them 2 or 3 yards from the old place on either side all the better, but no other hive should stand between them for some days.

There are other modes of artificial swarming, but the one here described is by far the nearest approach to natural swarming, and is therefore the best and most successful. All the beekeepers we know who have seen it done frankly acknowledge that it is about as perfect and satisfactory as it can be. My father practised it some twenty years before I was born, and for some years before he was taught to use smoke to stupify bees. Probably he learnt it from Bonner's book on bees, which was published about one hundred years ago; but of this I have no evidence—Bonner's book was never in our house in my day. About eighty years ago my father and William Alexander (a friend of his in Lanarkshire) were in partnership in bee-keeping in an extensive way, and then they commenced to swarm artificially, and their mode of doing so (copied or invented I cannot say) has been handed down unimproved to the present time. I have practised it for half a century or thereabouts, and now could undertake to swarm four or five score of hives in a day without a failure.

In natural swarming the old queen goes with the first swarm, leaving young queens in royal cells in the old hive. In the mode of artificial swarming now described the old queen goes with the swarm; and if the bees have not queens in royal cells at the time, they soon begin to set and form them after the swarm has been taken.

In natural swarming there is sometimes a miscarriage—the queen does not go with the swarm, and the bees speedily return; and if in artificial swarming the queen does not run up into the empty hive or go with the swarm, the bees return to the mother hive. No harm has been done, only a little labour lost. But in nineteen cases out of twenty we find that the queens go with the swarms. As our bees are often swarmed at a distance from home we make sure of having the queens with the swarms. Before placing the swarm on a board we turn the hive containing the swarm on its crown, with a view to see the queen. But this looking for and seeing the queen is not absolutely necessary; indeed, very few beginners have courage enough to face twenty thousand or thirty thousand bees, and look for the queen in the crawling mass.

There is no difficulty at all in artificial swarming. The difficulty with inexperienced apiarians is to know when the hive is ready, and how many bees should be taken when it is ready. Well, bees enough to cover all the combs thinly should be left in the mother hive. When too many have been taken from it the swarm should be removed from the spot, and the old hive placed on it to catch all outsiders till it is strengthened by numbers. If too few have been taken from the old hive, some more should be driven up and united to the swarm. A very little experience enables bee-keepers to practise the artificial mode of swarming with satisfaction and success. One object lesson—one successful attempt, will be more convincing than this long letter.—A. PATTICRAW.

OUR LETTER BOX.

BEES DRESS (H. E. B.).—Inquire of Messrs. Neighbour, High Holborn, London.

BEES KILLED IN HIVE (T. W.).—We think that there was no mismanagement in having your swarms, though we cannot with certainty tell why some of the bees in one swarm were killed. They did not belong to the swarm that killed them. As all your hives were ready for swarming at the time, the probability is great that those killed belonged to one of your other hives just on the eve of swarming. Let the bees in your old-fashioned hive remain where they are till the 16th or 18th of this month, when the young queens

and almost all the brood will have been hatched and perfected, then drive them all out into a better hive.

A CAST-OUT QUEEN (A Derby Subscriber).—The bee you have sent is a young queen. Doubtless three or four young queens were piping in your hive for some days before your cast came off. The queen you found dead and sent to us had left her cell rather too soon (before the day of swarming), and was therefore killed and cast out. If she had remained in her cell till the swarm had gone she might possibly have been elected to be the queen of the old hive instead of her sister now occupying the throne. It is a very common occurrence for young queens to be cast out after second swarms have left their hives. If their impatience will not let them bear confinement in their cells for three days and nights they are killed and cast out before swarming.

DRESSING RABBIT SKINS (H. E. Eiford).—Take the skin as fresh as possible, and having mixed a sufficient quantity of salt and water till it will bear an egg, saturate it with alum; put the skin into this blood-warm, and let it lie and soak twenty-four hours; then take it out, and having tacked it upon a board (the fur inwards), scrape the skin, and a thin membrane will come off; then, having warmed up the pickle again, put the skin into it a second time, and let it remain five hours more; after which take it out and nail it upon a board to dry (fur inwards), and then rub it with pumice-stone and whiting. Hare and other skins may be prepared in the same way. They are always in best condition for preparing in the winter. Rub the scurfy places on your Rabbits with sulphur ointment.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.
Lat. 51° 39' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain.
1876.	Barometer at Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
June.		Dry.	Wet.			Max.	Min.	In sun.	On grass	
We. 7	Inches. 30.000	deg. 58.5	deg. 51.3	W.S.W.	deg. 55.8	deg. 58.3	deg. 52.3	deg. 118.4	deg. 51.6	—
Th. 8	29.894	58.0	51.8	W.S.W.	55.0	58.5	45.3	90.8	58.5	—
Fri. 9	29.708	54.7	51.0	W.	55.0	58.4	50.3	89.6	48.2	0.010
Sat. 10	30.188	54.4	50.9	N.W.	55.5	58.5	50.0	116.5	47.1	—
Sun. 11	30.123	59.0	50.3	N.W.	57.5	73.3	59.4	118.1	54.5	—
Mo. 12	30.069	59.5	50.8	N.W.	57.5	73.1	44.0	122.9	48.4	—
Tu. 13	30.037	59.3	54.5	N.W.	58.0	58.3	57.8	88.7	55.1	0.010
Means	29.998	59.1	53.1		56.5	58.5	48.4	107.4	48.7	0.289

REMARKS.

7th.—Fair all day, but not bright at any time, and sometimes very dark.
8th.—Fine morning, but a cheerless day—no sun, no rain, and scarce any wind; very fine at night.
9th.—Dull sunless day; a little rain in the evening.
10th.—Fair, but dull, heavy, and thunder-like in the morning, but clearing off before noon, and very fine afternoon, evening, and night.
11th.—Splendid morning; a very beautiful day throughout.
12th.—A very fine morning and afternoon, but rather cloudy and storm-like, with heavy air in the evening.
13th.—Very dull, dark, and storm-like all day, but no rain till 7 P.M., from which time it fell rather heavily for some time. The evening closed in more than an hour earlier than on the preceding day.
Some of the days were very oppressive and storm-like, but not very warm, the mean temperature only exceeding the mean of the previous week by about F.—G. J. SYMONS.

COVENT GARDEN MARKET.—JUNE 14.

A BETTER tone has ruled the market since our last report, and all classes of goods have been more readily cleared. Outdoor Strawberries from the west of England are arriving in fair quantities, but show signs of the backward season, and it is quite evident that a week will elapse before any supply reaches us from near home.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	6	0	0	Mulberries.....	lb.	8	0	0
Apricots.....	box	1	6	0	Nectarines.....	dozen	8	0	0
Cherries.....	box	1	6	0	Oranges.....	♣ 100	8	0	0
Chestnuts.....	bushel	0	0	0	Peaches.....	dozen	8	0	0
Courants.....	dozen	0	0	0	Pears, kitchen...	dozen	8	0	0
Black.....	do.	0	0	0	dessert.....	dozen	8	0	0
Figs.....	dozen	9	0	0	Pine Apples.....	lb.	1	0	0
Filberts.....	lb.	0	0	0	Plums.....	♣ sieve	0	0	0
Gobs.....	lb.	0	0	0	Quinces.....	bushel	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, house....	♣ 100	6	0	0	Strawberries.....	lb.	1	0	0
Lemons.....	♣ 100	6	0	0	Walnuts.....	bushel	4	0	0
Melons.....	each	2	0	0	ditto.....	♣ 100	1	6	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	4	0	0	Beans.....	dozen	1	0	0
Asparagus.....	♣ 100	1	0	0	Mustard & Cress	punnet	0	2	0
Brussels Sprouts	dozen	1	0	0	Onions.....	bushel	2	0	0
Broccoli.....	dozen	1	0	0	Pickling.....	quart	0	6	0
Broccoli Sprouts	♣ sieve	0	0	0	Parley.....	doz. bunches	2	0	0
Cabbage.....	dozen	1	0	0	Parasips.....	dozen	0	0	0
Carrots.....	bunch	0	4	0	Pears.....	quart	2	0	0
Cauliflower.....	♣ 100	1	0	0	Potatoes.....	dozen	8	0	0
Cauliflower.....	dozen	1	0	0	Kidney.....	do.	3	0	0
Celery.....	bundle	1	0	0	New.....	lb.	0	2	0
Coleworts.....	doz. bunches	2	0	0	Radiishes.....	doz. bunches	1	0	0
Cucumbers.....	each	4	1	0	Rhubarb.....	bundle	0	8	0
Endive.....	dozen	1	0	0	Salsify.....	bundle	0	2	0
Fennel.....	bunch	0	8	0	Scorzonera.....	bundle	1	0	0
Garlic.....	lb.	0	8	0	Saskals.....	bushel	0	0	0
Herbs.....	bunch	0	8	0	Shallots.....	lb.	0	2	0
Horse-radish.....	bundle	4	0	0	Spinach.....	bushel	4	6	0
Lettuce.....	dozen	0	6	0	Tomatoes.....	dozen	1	6	0
French Cabbage.....	1	6	2	0	Turnips.....	bunch	0	4	0
					Vegetable Marrows.....		0	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JUNE 22—23, 1876.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.							
22	Th	Exeter Rose Show.	75.6	47.1	59.9	8 45	8 19	8 30	9 43	1	1 46	178
23	F		72.7	48.9	61.5	8 45	8 19	4 53	10 20	2	1 59	174
24	S	Reigate Rose Show. Royal Botanic Society at 8.45 p.m.	74.1	49.1	61.1	8 45	8 19	6 28	10 44	3	2 12	175
25	Sun	3 SUNDAY AFTER TRINITY.	78.0	49.3	61.1	8 46	8 19	8 0	11 2	4	2 24	176
26	M	Royal Geographical Society at 8.30 p.m.	74.8	49.3	61.7	8 46	8 19	9 28	11 15	5	2 39	177
27	Tu		73.8	48.2	60.5	8 47	8 19	10 50	11 36	6	2 50	178
28	W	Burton-on-Trent Show. Maidstone Rose Show.	78.7	49.1	61.4	8 48	8 19	after.	11 39	7	3 2	179

From observations taken near London during forty-three years, the average day temperature of the week is 78.3°; and its night temperature 48.7°.

PEACH BLISTER.



WHAT is Peach blister? It is a disease affecting the foliage only when it is young and tender, appearing in the form of blotches or blisters irregular in form and size, being sometimes as small as a pea and occasionally spreading over an entire leaf. The affected part, having a pale sickly appearance, becomes much thicker in substance than the healthy part, and rises into a convex form precisely similar to other blisters. It is distinct from all other forms of blight and cannot be mistaken.

What is the cause of Peach blister? It is caused by the exposure of the expanding foliage to the influence of frost or cold cutting winds. Can decisive proof be had of this? Yes, every spring affords clear proof, and none more strong and conclusive than the present one. Here are a few examples—1, Upon a west wall every tree is perfectly healthy with a free, strong, unchecked young growth clothed with fine foliage, perfectly clear and quite free from blister or blemish of any kind. 2, Upon a south outer wall, along which the cold east wind swept unchecked, the foliage of every tree, both Peach and Nectarine, is much blistered, but some leaves are quite sound, and these are near the base of the shoots and have had the shelter of the tips of surrounding shoots. Still clearer evidence of the scathing power of the cold wind is gained from a few shoots which, springing out further from the wall than the others, have their projecting tips entirely affected by blister—leaves, leafstalks, and the soft young wood itself are all discoloured, swollen, and contorted, having a miserable, sickly, gouty appearance that is palpably owing to the cold and nothing else. 3, Upon a south inner wall all the trees near the east end, and therefore having the shelter of the east wall, are quite sound, but further on where the trees are more exposed they are affected by blister precisely in proportion to the extent of such exposure.

Now, to my mind, nothing can be more conclusive than the foregoing facts, supported as they are by the experience of former years. So strongly am I convinced of this that I do not hesitate to challenge the opinion of those who maintain that blister is caused by aphides. If I am asked for further proof I say at once, Let us turn from theory to existing facts. Here is one such that is very important—three Peach trees have this season been so much infested with aphides that every leaf and branch had to be washed five or six times before we could eradicate them; the effect of these repeated attacks has been a contraction of the leaf tissue to such a serious extent that most of the foliage is curled and deformed, but there is not a single blistered leaf upon either of the trees.

It has also been asserted that blister is caused by a fungus (*Ascomyces deformans*). This is undoubtedly a mistake; the fungus forms upon the affected part simply because it is a favourable medium for its development.

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Cold ungenial weather is the sole cause, and that we have the remedy in our hands by planting on a south-western aspect and by affording suitable protection to trees in more exposed situations.

The delicate and sensitive nature of young Peach foliage is not by any means so generally recognised or understood as is desirable, and yet the fact is one of great importance, affording an indication of the plainest and most striking nature of the measures that are indispensable to successful culture. It tells us to watch the development of an organ upon the condition of which everything depends—the crop, the growth, the very existence of the tree itself, to cherish it by every means in our power, to cleanse it from insects with a prompt and ready hand, and to screen it from frost and cold cutting winds.

Can anyone who asserts that fungus is the cause of blister give us any facts in support of a theory which upon the face of it strikes one as being mischievous and calculated to mislead? I am induced to ask this question from the fact that two garden periodicals have lately published a recipe consisting of soot, lime, sulphur, &c., mixed together in water and applied to the branches after the winter pruning as a cure for Peach blister! Is not this worthy to rank with the "Phospho-silicon manure," which was offered to the public a year or two ago as a sure remedy for the Potato blight! offered, too, with an explanation of how it was to induce the Potato to absorb or take up so much pounded glass into its growth as to stiffen the foliage and thus render it blight-proof? No similar explanation is put forth with this recipe, and I shall be glad to learn something about its effect before using any of it. Is it absorbed into the tissue of the wood and so renders the foliage cold-proof, or in what way does it act? We are perfectly well aware that it would be an undoubted advantage if the Peach were somewhat more hardy, but I for one fail to see how this may be effected by any dressing or nostrum whatever.

—EDWARD LUCKHURST.

LIME.

LIME is present in most soils, and is found in the ashes of most plants, in some to a considerable extent. Liebig considered the beneficial effect of an application of quicklime to be in decomposing minerals which contain potash and soda, liberating those substances and making them available as food for plants. Yet, though lime be an inorganic substance it is none the less a necessary element of the food of plants, for all plants contain it: hence by supplying lime to a soil deficient thereof we afford a necessary element of plant food. Most soils, however, contain a sufficiency of lime to meet the demands of plants. Clay soils contain seldom more than 5 per cent. of lime; sandy loams and sandy soils, having little clay or alumina, have considerably less lime. Marly soils vary considerably in their proportions of lime, usually from 5 to 20 per cent., and when of a loamy character having 20 to 80 per cent. of clay, with corresponding

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silicates, and rich in humus, we have a fertile soil, especially for fruit trees.

Soils not containing lime are not necessarily made fertile by its application, for if applied to a very sandy soil it may by liberating potash and soda benefit the present crop, but it is at the expense of the soils' exhaustion. An application of marl to such a soil would be better, because more enduring than lime. Olays, especially strong clays, are improved by the addition of sand, and more highly and permanently by burning, by which we obtain chemical changes of the highest importance—rendering the soils' constituents soluble and in a state to be appropriated by the roots of plants—and also mechanical changes making the soil more porous. Sand for calcareous clays and clays for calcareous sands must be a more permanent improvement than any other application. Too much dependance is placed upon manures and expense incurred in them. A sandy soil, for instance, may by heavy manuring be continued in fertility for a lengthened period; but were a thorough marling given at the onset the soil would be so modified by the admixture as to make available in a higher degree the manures applied with a corresponding increase of produce. No manure will compensate for a deficiency in the constituents of a soil for garden purposes. It is a common error to act on the principle that any soil, however poor and shallow, may by manuring be made suitable for the growth of every description of vegetable and fruit crop.

It may be urged that agriculturists do not seek to change the character of the soil. I am very much mistaken if they are not in advance of horticulturists, especially in the application of inorganic manures. They are not so wasteful of the organic manures as are horticulturists, whose sole principle of production consists of "muck." Of inorganic manures we make next to no use in gardens, yet for many purposes they are highly essential, especially in the formation of fruit-tree borders. It is not through want of knowledge, but more frequently by want of means not being placed at the disposal of those entrusted with their formation, and to make up for these defects of first formation repeated heavy dressings of manure are called into requisition. Again, in forming gardens too little regard is had to the subsoil. In many instances the soil is permanently injured by trenching, the good soil being buried and the subsoil brought to the surface, and not until a corrective of the injurious constituents is applied is the fertility of the soil restored.

It is as a corrective that we seek the aid of lime in gardens. The soils of some gardens are by the long continuance of manures rich, yet the plant food which they contain is sealed against the plants, but by an application of lime the soil's virtues are liberated. Soils, by want of proper admixtures, become practically unproductive of the crops they were intended to supply. They are worn out, as it is termed. Worn out of what? Certainly they are not destitute of humus, as is evidenced by the great growth of some plants. Potatoes produce haulm of great length and waxy grub-eaten tubers. Peas are remarkable for "straw" only, and fruit trees are sterile. A change, indeed, is then needed by the introduction of inorganic manures. Soils are frequently rendered unproductive by the erroneous application of manures. The remedy I shall propose is quicklime, and the quantity to be applied may be at the rate of two hundred bushels per acre, or, making a deduction for walks, 160 bushels will be required for a kitchen garden of one acre of medium garden soil; for a light soil a hundred bushels will be a sufficient dressing; whilst to a clay soil the first-named quantity of two hundred bushels per acre may be applied.

The action of the lime will be to promote the decomposition of animal and vegetable substances, and render soluble inert substances conducing to fertility. The lime should be applied fresh, distributed over the surface, and pointed in lightly with a fork in early autumn or early spring, avoiding wet weather. If the fruit trees are infested with moss advantage should be taken of the liming to give them a thorough dusting. No manure should be applied in the year of liming, or in a case of this kind in the autumn preceding. A liming of this kind will be sufficient for three years, and is only to be employed as a first liming to a garden not in the "memory of man" known to have had a similar dressing, or to a garden fresh made from grass land. To ordinary garden ground, well manured and fairly productive, a liming every fourth year at the rate of thirty bushels per acre for a light soil, fifty bushels for soils of medium texture, and seventy-five bushels for clays, will be found sufficient and advantageous. These dressings

are best given in February or early in March, the manure being applied in autumn at the time of digging.

For orchards a dressing every seven years of one-sixth of lime in combination with a compost of vegetable refuse and soils, such as ditch-cleanings, &c., applied at the rate of twelve to twenty cartloads per acre as a top-dressing, cannot fail to be beneficial; it is also excellent as a top-dressing for lawns, in either case being applied in November up to February, or not later than early March. To light soils, however, unless heavily manured, mild lime, or even old lime or mortar rubbish, may be a better application than quicklime. I do not advise the application of quicklime to poor light soil. Peat soils are an exception in light soils, and are of varied descriptions. There is a kind of peat very dark in colour, close in texture, and when dried highly inflammable; it is one of the worst possible of peats for plants. Liming at the rate of two hundred bushels per acre will correct the acidity of the peat, and by decomposing the vegetable fibre will be found of great utility. Another kind of peat is of a brown colour, soft and spongy though fibrous and varying in texture, in some instances firmly compressed, whilst in others it is loose; also considerably varying in containing sand, some samples being plentifully furnished therewith, and others are almost wanting it, but in all the creeping rhizomes of the common Bracken (*Pteris aquilina*) are plentifully found. This is the best of all peats for hard-wooded plants. To add lime is, of course, to destroy it for American plants, but to make it suitable for a fruit garden marling and liming must be resorted to. Bog soil—a black, soft, spongy peat, usually found in hollows and accompanied with water—may by liming as before mentioned be made available for most vegetable crops, but without considerable additions of marl and sand is unsuitable for fruits. In choice of lime for peats that known as magnesian limestone should be had, as it remains long in a caustic state, and for the same reason it should be selected for soils made "soapy" by heavy continued manuring.

Lime is justly appreciated in gardens as a destroyer of the pests which prey upon the crops. By making the ground quite white with quicklime during mild weather in early March, and with a prospect of rain, we make quick work of the snails and slugs, and by pointing it in after the first rain the lime will act beneficially upon the vegetable matter in the soil. If the first liming be not effectual repeat in May in dry weather. I always have on hand a stock of quicklime kept dry for this purpose. Lawns are frequently disfigured by wormcasts, and moss grows apace. A sprinkling with quicklime, making the surface white, will send away the worms. To kill moss apply the lime in November, for which a hundred bushels per acre will be necessary. Lime is also a valuable application to most kinds of soils prior to their being planted with Potatoes.—G. ASBET.

IN AND ABOUT THE TORQUAY LANES.

Two characteristics of these lanes I have never seen equalled—their dense shadiness and their red soil. They have been well described as shut in on both sides by luxuriant hedges and rows of tall Elm trees meeting above and overreaching the road, the side banks crowded with Ferns and wild flowers, and the peeps over the gates being into deep green valleys and over the craggy borders and bright water of Torbay. The redness of the soil—formed of the disintegrated red sandstone—is so intense when freshly turned up that fields then are almost scarlet. I am ready to believe that its constituents influence the things which it feeds, for the Devon cows are mostly red, and the flower which now is in thousands on every old wall and roadside bank is the *Centranthus ruber*, or Red Spur-Valerian. The Gladioluses are all red, and even the Roses in the Devon Boscary seem more crimson than elsewhere. The soil is especially favourable for Roses—it is a clayey loam; the mild climate also suits them, and there is more than the usual percentage of iron in the water—circumstances all promoting the florid in plants, animals, and man. I incline to think that paring and burning is called "Devonshire the land," because by the process the burnt soil is reddened. The mildness of the climate is shown by Geraniums remaining in the beds throughout the year. *Fuchsia coccinea* is similarly uninjured by our ordinary winters, but that of last year killed the young branches, though it did not destroy the shrub.

The Devon Boscary, Messrs. Curtis & Co.'s, deserves special notice. It occupies twelve acres, is traversed by two streams, and the head of one is at such an elevation as to enable water

to be delivered over the whole area by the aid of a vulcanized indianrubber tube. This and mulching between the rows of Rose trees maintains these in surpassing vigour. Every variety especially worthy of culture is there. On the day of my visit, June 12th, the Roses most prominently in flower were the Early Scotch and the Hybrid Bourbon called Céline. It must not be concluded that because known as a rosery no other flowers or plants are cultivated. All kinds are procurable, though Roses are the speciality both in the outdoor quarters and in pots. For the latter there is a greenhouse 180 feet long, and well pleased was I to learn that the demand for them is so large that another greenhouse of similar size is about to be erected. In the centre of the Rosery is the finest *Berberis Darwinii* I have ever seen. It is a perfect cone, symmetrical throughout, and clothed down to the surface, where it is 10 feet in diameter, and its height is full 12 feet.

Adjoining the Rosery are the remains of Tor Abbey, founded in the year 1120, and the lengthy avenues of gigantic Linden trees planted by the monks still remain. No finer specimens of this tree can be found in England, but they shall not divert me from the notes on the old varieties of the Rose, which I borrow from Mr. Curtis's. These notes refer exclusively to varieties introduced more than a quarter of a century since, and, in my opinion, not one produced since surpasses, and but few equal, them in any one desirable quality. They are all very superior Roses, and to facilitate selection from them I have divided them into sections according to the colours of their flowers.

WHITE.

DEVONIENSIS (Tea-scented).—Raised by George Foster, Esq., Oatland, near Devonport, who believed it was a seedling from the Yellow China impregnated by the Yellow Noisette Smithii. The stock was purchased by Messrs. Lucombe, Pince, & Co., of Exeter. Most sweetly scented.

QUEEN VICTORIA (Hybrid Perpetual).—Raised near Paris, and introduced in 1851.

MADAME WILLERMOZ (Tea-scented).

PINK.

DUCHESS OF SUTHERLAND (Hybrid Perpetual).—Raised by M. Laffay. Very sweet-scented.

ARMOSA (Bourbon).—Believed to have been raised by M. Laffay. Small flowers, but beautifully formed.

ARBOREUX CHARLES (China).—History unknown. It is one of the freest of bloomers.

POMPONE DE ST. RADEGONDE (Hybrid Perpetual).—Raised at St. Radegonde, the estate of Comte de Mondéville, and introduced in 1846.

EUGENE DESGACHES (Tea-scented).—Raised at Lyons by M. Plantin, and sent out in 1844. Highly scented.

LA REINE (Hybrid Perpetual).—Raised by M. Laffay in 1848.

DUCHESS DE MONTPEINSIE (Hybrid Perpetual).—Raised by M. Margottin at Paris, and sent out in 1847.

PRUDENCE ROESER (Hybrid Perpetual).—Raised, it is believed, by M. Vibert of Angers.

AMANDINE (Hybrid Perpetual).—Raised by M. Vibert of Angers in 1844.

GOUBAULT (Tea-scented).—Raised by M. Goubault of Angers about 1848. "Of all Tea Roses this is our favourite for fragrance."

REINE DES FLEURS (Hybrid Perpetual).—Raised by M. Portemer near Paris, and sent out in 1847.

GENERAL NEGRINER (Hybrid Perpetual).—Raised by M. Portemer of Gentilly, near Paris, in 1848. A seedling from Madame Laffay.

BARONNE PRUVOST (Hybrid Perpetual).—Raised by M. Desprez near Paris, and sent out in 1844.

SOUVENIR D'UN AMI (Tea-scented).—Raised by M. Bellot at Fougères, near Moulins. Introduced in 1846.

SOUVENIR DE MALMAISON (Bourbon).—Raised by M. Beluze at Lyons in 1848.

LOUISE PRYRONNY (Hybrid Perpetual).

JOAN OF ARC (Hybrid Perpetual).—Raised by M. Verdier, and introduced to England in 1848.

CAROLINE DE SANSAL (Hybrid Perpetual).—Raised by M. Desprez. Introduced in 1850.

WILLIAM GRIFFITHS (Hybrid Perpetual).—Raised by M. Portemer of Gentilly. Introduced here in 1851.

IRMA (Tea-scented).—Raised in France, and introduced here in 1849.

ORIMSON.

GÉANT DES BATAILLES (Hybrid Perpetual).—Sent out by M. Guillot of Lyons in 1847. Sweet-scented and of fine habit.

DR. MARK (Hybrid Perpetual).—Raised by M. Laffay of Belle Vue, near Paris, and sent out in 1842.

MARGAT JEUNE (Bourbon).—Raised by M. Souchet at Bagnolet, near Paris. Sent out in 1846.

STANDARD OF MARENGO (Hybrid Perpetual).—A seedling from the Duc d'Angoulême Perpetual. Sent out in 1848 by M. Guillot of Lyons.

GENERAL DROUOT (Perpetual Moss).—Raised by M. Vibert of Angers, and introduced in 1847. "A veritable Moss Rose of vigorous growth, blooming in autumn."

ROBIN HOOD (Hybrid Perpetual).—Raised by M. Laffay.

ORAMOSIN SUPERIEURE (China).—Offspring of the old Mandarine brought from China by Lord Macartney in 1789.

BARONNE HALLEZ (Hybrid Perpetual).—Raised by M. Portemer, near Paris, in 1849.

GENERAL CAVAIGNAC (Hybrid Perpetual).—Raised by M. Margottin. Introduced here in 1850.

WILLIAM JESSE (Hybrid Perpetual).—Raised by M. Laffay. Sent out in 1838.

YELLOW.

CLOTH OF GOLD (Tea Noisette).—Raised by an amateur at Angers from the seed of the Noisette Lamarque. 1848.

ELISE SAUVAGE (Tea-scented).—Raised by M. Miller, a *Idale* florist, about 1843.

SAFRANO (Tea-scented China).—Raised by M. Beauregard of Angers, and sent out in 1839.

VICOMTESSE DE CAZEN (Tea-scented).—Raised by M. Tradel at Montauban, and sent out in 1846.

SOLFATERRE (Tea Noisette).—Raised by an amateur at Angers. Introduced in 1843.—G.

SYRINGING.

MR. ABBEY'S writings on this subject prove that he has thought well and wisely about it, and I heartily join him in condemning the practice of syringing plants every day regardless of weather. I dare venture to say that I use the syringe even less than he does, and I am certain that more harm than good is done by its use. My memory will only serve me with three reasons for using the syringe—first, for applying dressings for preventing or killing insects; secondly, for slightly dewing over the foliage of certain plants indoors at shutting-up time after a day of excessive evaporation; and thirdly, for washing the foliage.

I do not now discuss the point as to whether plants absorb moisture by their leaves or not, for since it is said to be proved that some of them can actually absorb and digest a beefsteak I suppose I ought not to have the slightest doubt about the power of any one of them to drink; but I am bound to say that the instances cited by Mr. Abbey are capable of bearing other explanations than those he gives them, and also that I should think the power of the foliage to absorb moisture must be very limited in such plants as emit aerial roots. A large Vine with sufficient foliage to cover a quarter of an acre is just as liable to throw out aerial roots if it cannot obtain what it wants below the surface as is a smaller one. My reason for dewing over the foliage after excessive evaporation—and it is a sufficient one for all practical purposes—is, that if the house is closed at the same time evaporation is more completely checked till such time as the plants can reconquer themselves. I do not believe that syringing a plant outdoors or even indoors, unless the air is confined, does any good at all besides washing it. Here again I find I differ slightly from Mr. Abbey. He thinks that with early and abundant ventilation plants would not be liable to be scorched if syringed during bright sunshine. This might hold good where a greenhouse temperature only was maintained, or one differing but slightly from that outside; but a forcing house I would on no account syringe till the ventilators were completely closed, as I think that were the ventilators open the evaporation after syringing would be increased.

On the other hand I do not hesitate to sprinkle the tenderest of plants overhead during the brightest of sunshine with a temperature of 120°, provided the house is closely glazed and the plants are not very near the glass. Scorching with robust plants is not produced by heat alone; heat of course is the primary cause, but it is excessive evaporation which allows the plant to become scorched. I may here also remark, before I forget it, that the same cause will produce "rust" on Grapes, and "scalding" of Lady Downe's and others. Let a vine rise by sun heat 15° or 20° before giving air, a beautiful dew will be deposited on the leaves, fruit, and anything else which

does not get heated so quickly as the air of the house; then give air sufficiently to lower the temperature of the house 5° or 10° suddenly, and you will probably soon have scorching, rust, and maybe red spider into the bargain. The prevention of course is early ventilation, or in the event of the house getting hotter than desirable, rather let it remain hot, only giving sufficient air to prevent it rising much higher. All this of course is well known to Mr. Abbey and other practical cultivators, and I only mention it here to show that scorching with robust plants is caused by rapid evaporation, and not often by confined heat.

Now, the same cause which produces the dew on the Grapes and is so injurious to them when not properly managed is turned to a useful account in growing Cucumbers, Melons, and many other vigorous plants which do not require the same amount of ventilation that Vines do. The houses are allowed to cool down to 60° or lower at night, and as day breaks and the natural outside temperature rises that inside the house rises too, and the moisture condenses on the cold surfaces of the leaves, causing by four o'clock a dew as perfect inside the house as it is outside, and quite doing away with the necessity of syringing. We leave a little air on our vineries and keep a little warmth in the pipes to prevent too great a condensation of moisture, but on many other plants the more moisture the better; the plants like it, and insects do not.

I not only do not syringe Vines at all, but I do not damp the surface of my large vineries more than twice a week in the brightest of weather. In small houses more damping is necessary, for the atmosphere should certainly never be dry till the fruit is ripe; but to sprinkle the surface when it is already damp is folly, and tends to make the soil sour and impervious to air. Peaches also are never syringed in the ordinary use of the word; they are occasionally dewed over at closing time on a hot day after the leaves have grown to their full size.

It is a great fallacy to suppose that syringing Vines, &c., at starting time will cause them to break regularly. If they are well ripened, and they have not too much fire heat at first, they will break well enough; but if not ripe, neither syringing nor anything else will cause them to break regularly in the early part of the season.

It may be asked, How are insects to be kept down if the syringe is not to be used more than this? And in this I thoroughly agree with Mr. Abbey, that there is more value placed on the syringe for this purpose than it deserves. If red spider appears on a Peach tree indoors or out it receives two or three drenchings of soft-soap water, 2 ozs. to the gallon, on two or three successive evenings after the sun is off.

Indoors the soapy water has to be immediately syringed off the glass and paint, or it would injure them. Vines when well managed are not very liable to red spider, but a sharp look-out should always be kept, and on the first appearance the infected leaves and others close to them should be immediately sponged with soapy water. I find nothing equal to soft soap for eradicating insects, but it varies a great deal in quality, and the commonest sort is of very little use.—WM. TAYLOR.

TWO-DAY ROSE SHOWS.

As the writer of the original article in the *Journal of Horticulture* of April 20th I should like, if space allow, to gather up the threads of the discussion. It is especially important just at the present moment, because exhibitors and all other rosarians will be meeting at the shows during the next three weeks, and can lay their heads together with a view to a practical decision upon the point.

The position which I took up against the extension of a show beyond the first day has since been supported by letters from Mr. Badolphy, Mr. Peach, Mr. Camm, Mr. Jowitt, and anonymous correspondents. These are practical men whose opinions must carry weight. The only letter which has taken a line in contravention is one signed "H. C." in the *Journal* of June 1st. He states that "there are some good and fair reasons, not merely financial, why Rose shows may sometimes be held for two days." Possibly, but he does not state them with the single exception that the public are disappointed if the first and only day is wet. Let me reply to this, that a show if held in a building such as used at Hereford, Crystal Palace, and Alexandra Park is perfectly independent of weather, and that such buildings are infinitely superior to tents. I write under correction, but I should hardly think that "H. C." can be an exhibitor on a large scale and at great distances from home, or he would not make light of the ex-

pense and annoyance to exhibitors of a two-day show as he does. Nor would he talk of re-making collections for the second day with "a small hamper of fresh buds sent up by night train to the man in charge!" I am unfavourable to the notion of exhibiting Roses in three stages. At a first-class show we want to see each variety in its greatest perfection. This is attained by different varieties at different stages of expansion. But I would not give a straw to see a Rose which would have been a good one if it had been allowed to remain two days longer on the tree. The true value of Rose shows, besides the introduction and criticism of new candidates for favour, lies in this—that we have all the glorious varieties of the Rose produced in their full splendour, which would never be done without the shows. No one who is not an attendant at first-class shows, besides being himself a grower, knows what is the perfection of any variety.

There also appeared in the *Journal* of June 1st a letter from "PHILANTHUS," which I think contains much sound doctrine. If it be true, as he states, and I am not in a position to dispute it, that the entrance money paid by the "general public" does not compensate for the extra expense necessarily incurred in procuring their attendance, I would vote with him for limiting the entrance to subscribers and their friends. Before condemning this plan as mean, stupid, or exclusive, let anyone read the letter of "PHILANTHUS." I hope that it would not be found necessary to give up the decorative-foliage plants for background or the music, both of which accessories add greatly to the general effect of a show. The foliage plants check any tendency to monotony in appearance, and the band has a particularly enlivening effect.

I will conclude with one more remark—that it is impolitic, by adding to the labour and expense of shows, to discourage numerous exhibitors who are either not rich or who have great difficulty already in visiting a show owing to professional employment, thus giving more advantage to men of wealth and ease, who have indeed sufficient as it is.—T. H. GOULD, Mortimer.

THREE NATIVE BEAUTIES.

THE flowers are blooming everywhere, gems of nature cheering by their perfume and charming by their simple loveliness. The first of the trio I have to note *Neottia* (formerly *Listera*) *Nidus-avis*, a beautiful plant. Of this I found a quantity 4 inches to nearly a foot in height, and such a sight I never saw before; and while admiring the natural bed I discovered close by *Pyrola rotundifolia*, a real gem in its own home; and near it a dense mass of *Asperula odorata* as white as snow. I recently found these plants "wildly growing," and could not but admire them. In some places the Woodrooff is laid in drawers as a preventive against moths.—OBSERVER.

AUTUMN CAULIFLOWERS.

WHEN Peas are over and Kidney Beans are destroyed by frost, then is a supply of Cauliflowers especially valuable. At that time—say in November and December, root crops and green crops are too commonly all that are provided for the culinary requirements of the household. In most gardens Cauliflowers are plentiful in the autumn, but after autumn—that is, in early winter, they are often unpleasantly scarce.

Where the winter supply is not provided for there is yet time to do it, and it is quite easy to supplement the supply of Veitch's Autumn Giant, which will be produced by seed sown in April, by sweet small white heads of Walcheren from seed sown during the last week in June. The plants from this sowing will not be large plants, and the heads which they will perfect will not be large heads; but if they are small, plentiful, and good, we may ignore the question of size as being of little importance. Four small Cauliflowers each 2 to 3 inches in diameter are much more suitable for a gentleman's table than one head a foot across; neither need the four small plants take up more room than the one large plant, as they will certainly not so greatly exhaust the soil.

Having had for a number of years a family of forty persons to supply, I have found my large batch of small Cauliflowers in November and December to be of the greatest value. I now mention the matter as a seasonable reminder to others who might forget or overlook the value of the crop or hesitate to sow Cauliflowers so late in the season.

The variety which I rely on for the present sowing is Walcheren, finding it somewhat harder than some otherwise good varieties. The seed is sown thinly in a cool place, and in

very rich soil, in order that the plants may make a quick early growth and escape serious injury by the "fly." Thin sowing is very important, for if the plants are crowded in the seed bed the stems become long and tender, and not in a good state to withstand the cold to which they will eventually be subjected. The plants are subsequently planted in trenches in a south border, which has been cleared of early Peas and Potatoes, and after a few soakings of manure water the Cauliflowers commence forming heads early in November, when the plants are removed and laid in frames, sheds, or under such shelter as can be found, and a supply of small useful Cauliflowers is thus provided up to January.—A SURREY GARDENER.

STRIATOTES ALOIDES—WATER SOLDIER.

THE accompanying figure represents one of the most beautiful native aquatic plants, which is somewhat rare, yet plentiful where it does exist. It is found in what are termed the fen counties, and may be seen at home chiefly in Cambridgeshire and Lincolnshire. In these counties plants are met with in large numbers.

It is a perennial stoloniferous plant, increasing itself by long creeping stolones, at the ends of which are formed roots, leaves, and buds. I am not quite certain whether these rise to the surface to flower and become fertilised, and then return to the bottom to take root in the mud, sow the seed, and go on increasing. I have not watched so minutely as to ascertain that.

The flower stalk rises from a sheath amid the Aloe-like leaves, hence its name. It flowers in June and July, sometimes ripening seeds, which always produce plants of the original type. It is a singular-looking plant, having a star-like tuft of leaves, the edges of which are armed with teeth-like prickles, which are very sharp. I have met with plants of *Stratiotes aloides* in more northern districts than those named, but I am inclined to think they had been introduced from other parts of the country. Our Water Soldier is no doubt a stranger to many, and is worthy of attention.

It may be cultivated in ponds where there is a moderate depth of water and mud for the plants to root in, and when once established they are well able to take care of themselves. They appear to prefer rather stagnant water than otherwise.—N.

BOUGAINVILLEA GLABRA.

UNLIKE some of the genus this is a free-growing as well as a free-growing plant, its mauve-coloured bracts being highly effective. It succeeds admirably in a cool stove, requiring a light airy position, the chief point in its culture being the thorough ripening of the wood. How this and many other plants with no natural provision for climbing came to be classed as climbers I cannot understand, for the *Bougainvillea* has no tendrils like a *Passiflora*, no aerial roots to attach itself by as *Ivy*, nor is it at all given to twine like a *Stephanotis*. What claim, then, have *Allamandas* as well as *Bougainvilleas* to be classed as climbers? They, like some *Roses*, cover the face of a wall when assisted by shreds and nails; but they are not climbers, and are best seen to advantage when trained to trellises. The *Bougainvillea* does well on a balloon trellis, and is simply grand as a standard, to secure which form we have

only to train-up to the height required, then stop, removing all the side shoots but the three uppermost, and stop these repeatedly so as to form a round compact head, and support by an iron stake with three prongs to maintain the plant in position.

Being deciduous it requires to be kept dry in winter, and yet the wood must not shrivel. Commencing growth in February or early in March it should then be potted, having had very little water from November up to that time, and whatever pruning is required should then be done. This I confine to cutting-out the old and weak wood, leaving sufficient of the vigorous well-ripened wood for covering the trellis with flowering shoots, every eye of which will give a shoot and a number of flowers from its point in May and June. Most of the old soil is removed in potting, and the plant returned to the same or a slightly increased size of pot. If the plants are young it is well to grow them on for a year, and not put them to a trellis until the second year.

The drainage is made efficient, the soil well worked in amongst the roots and made rather firm. Three parts light turfy loam, a part each of leaf soil, sandy peat, and silver sand, the soil broken-up and used rather rough, is a suitable compost. Water is given sparingly until growth commences, and then increased with the growth, it being liberally afforded when the growth is free and the plant in flower.

When this is past the shoots which have flowered are cut away to sound wood; water is given rather sparingly, but not letting the foliage flag, and when fresh growth begins, as it will do soon afterwards, the watering becomes liberal. These growths flower late in August or September, and this bloom is often the finest of the year. After this water is gradually withdrawn, and the plant goes to rest about November for

the winter. My plants from February to November are sprinkled or lightly syringed overhead twice daily, and floors, &c., damped at noon. Weak liquid manure does good when the pots are full of roots.—G. A.

MESSRS. F. & A. DICKSON & SONS' NURSERIES, UPTON, NEAR CHESTER.

AMONGST those provincial nurseries which have attained a world-wide fame, and which exhibit the skill and enterprise of English horticulturists, a foremost place has always been given to this celebrated Chester firm, and I think that perhaps the impressions received during a recent visit to them may not be without interest to the readers of "our Journal;" for although it may be to a certain extent true that one large nursery is like another, yet I fancy that where there is intelligence in the carrying-out of any establishment there is always something to be learned and something different from other establishments.

In visiting nurseries one often finds a *spécialité*, as our neighbours call it, of one kind or another. If I were asked what was that of the Messrs. Dickson I should say, Everything. It matters not whether it be stove or greenhouse plants, Conifers, fruit trees, *Roses*, forest trees, or anything else, they are all to be found here in large quantities, and special care is given to the various cultures. The time of my visit was about as badly timed as it could have been. At no time of the year does a nursery show to less advantage than in the early part



FIG. 134.—STRIATOTES ALOIDES.

of June. Everything is in a transition state: preparations are being made for bedding-out, houses being re-arranged and the general nursery stock shifted, while the long dry weather experienced in the north had not been helpful. But notwithstanding these disadvantages the Upton Nurseries were in excellent condition, things looking well, and activity prevailing in every department.

These famous grounds are now about 150 acres in extent, and stretch for a distance of a mile and a half, at some little distance from the charming quaint old city of Chester, a city which to once see is never to forget. The grounds occupy an elevated position a good deal exposed to westerly winds, and hence the stock acquires a hardy and robust character, which is very favourable to a purchaser who lives in a more genial climate and situation; for oftentimes when plants are removed from a very favoured locality to one where they have to rough it they suffer very much from the removal; but in the case of plants coming from a rougher climate and colder soil the reverse is the case. Here about one half of the ground is good sound loam, the other light sandy loam, and it is remarkable to find how plants which are usually supposed to require very different soil have adapted themselves to circumstances. Thus the Rhododendron, the home of which is always supposed to be the sandy peat of Bagshot and Knap Hill, is here found to succeed admirably in loam, and Araucarias and other Conifers thrive with great vigour.

I wonder how many of your readers know anything of the manner in which the common Larch is raised. I happened to visit the nursery when they were engaged in the operation, and it may not be without interest to state how it is done. It may give some idea of the extent of Larch growing when I say that half a ton of seed is used. This is obtained from Scotland and the Tyrol, the former being preferred owing to its greater hardness. The ground is first heavily manured, then dug very fine and thrown up into beds about 4 feet wide; it is then raked over three times with rakes of different degrees of fineness. Two men are then told off to the bed, one at each end, and a portion of the bed is raked off so that a small ridge is formed on both sides the whole length of the bed. The seed (which has been previously soaked for some days and then red-leaded) is then sown broadcast, half a pint of seed being the proportion for each square yard. The soil, which had been removed, is then raked over again, and a small hand-roller passed over it; and when the seeds have germinated, which they do in a very short time owing to the previous soaking which they have received, a portion of the soil is raked off and the young plants allowed to push themselves freely. It shows the value of little things when I say that after all this trouble and expense (for each bed costs in labour alone 6s.), at the end of two years these Larch will sell at about a farthing a piece.

In a very different way there was another matter that interested me. I remarked to the intelligent foreman Mr. Freeman on the goodness of the paths in the long range of greenhouses, they seemed so solid and good, and he told me that they were made in the following manner: First a layer of cinders about an inch thick is placed, and then on this is placed as a concrete a composition of one part Portland cement, one part sand, and one part limestone or chalk; it is laid on with a trowel, can be done by any ordinary labourer, and at a cost of about 10d. per yard, although when a builder was asked what he would do it for his reply was not less than 4s. 6d. In these same greenhouses was to be found an excellent collection of Azaleas, Camellias, Orchids, stove and greenhouse plants, Ferns, &c. One thing struck me as strange. I noticed some buds of *Taxonia insignis* with cotton wool tied round the footstalk, and found on inquiry that as soon as the flower is impregnated and the process of seeding commences, it is immediately attacked by ants, which gnaw the base of the calyx; consequently, in order to save the seed vessels, a piece of cotton wool steeped in paraffin has to be tied round the base of the footstalk; but until the flower is impregnated the ants do not touch it.

There are some ninety acres devoted to the culture of forest trees, which are to be counted by the million; for of seedling Larch alone there are from ten to twelve millions, and of transplanted Larch from five to six millions of good vigorous stuff. Then there are large quarters of Scotch Fir, Spruce, Austrian Pine, &c., and immense quantities of Birch, Horse Chestnut, Sycamore, and other deciduous forest trees. Hollies, too, thrive here remarkably well; and amongst a large number of seedlings from the Balearic Holly great variety of form was to be seen, while its rapidity of growth makes it a very desir-

able variety. The leaves of the Hollies are very much disfigured by a small boring grub, the eggs of which are deposited by a small fly not bigger than a cheese fly, many holes being punctured in the leaf as if with a pin; the grub eats the inner substance of the leaf and disfigures the tree, nor does there seem to be any method of getting rid of the pest.

A considerable portion of the ground is allotted to herbaceous and alpine plants, which are now again coming into favour, and were a special favourite with the elder Mr. Dickson the founder of the firm. Many old-established families which have been for years pushed on one side are here to be seen flourishing vigorously, while the contributions of more recent times have been added; a large number being grown in pots so as to be ready for removal at any time, while the larger and coarser-growing varieties were planted out.

As in every large, and indeed small, nursery now-a-days Roses are largely cultivated; and although not on the large scale of Mr. Smith of Worcester or those who make it their speciality, yet they were to be seen in large quantities and in fine condition. Of course in such a backward season as this there was nothing to be seen in the way of blooms, but there was abundant promise, and should anything like favourable weather come there will be a fine show of bloom. Roses in pots are also extensively grown, and large quantities of those two favourite Roses *Gloire de Dijon* and *Marschal Niel* were to be seen. The Messrs. Dickson are successful growers and have exhibited well, although I believe they do not now enter the arena; like others who have fought and won in the field they now rest on their laurels.

Fruit trees form a large portion of the stock of this nursery, and are to be found in the various forms which modern cultivation demands. *Synmids*, bushes, cordons, standards are all here extensively grown and were in capital health. In fact there was no part of the extensive grounds to which the same remark would not apply, and it would therefore be needless to mention more particulars. I should have been glad had time permitted to have gone down to see the farm which Mr. Arthur Dickson has at the seaside, where *Asparagus* is grown very largely and to a size that nearly equals the famed product of *Argenteuil*, but a great deal superior to that in flavour.

It remains but for me to add that nothing could exceed the kindness and hospitality with which I was received, and altogether my visit to Chester (of which more anon) leaves behind it many pleasant memories which will not soon be effaced. To the heads of the firm and to their able and intelligent foreman Mr. Freeman I am deeply indebted for much pleasant intercourse and valuable information.—D., Deal.

ROYAL HORTICULTURAL SOCIETY.

JUNE 21ST.

FRUIT COMMITTEE.—Henry Webb, Esq., in the chair. A quantity of Fern-leaved Parsley was sent from Mr. O. Osman, South Metropolitan District Schools. The leaves are ornamental and quite distinct. A dish of fruit thought to be small *Shadocks* was sent by some exhibitor, but his name was not in the dish with it.

FLORAL COMMITTEE.—W. B. Kalkook, Esq., in the chair. Owing to the show of fruit and flowers at the Botanic Gardens, Regent's Park, the new plants were very few, Messrs. Veitch, Bull, Williams, &c., having sent their productions to the larger exhibition. A small group of Orchids was sent from the gardens of Sir Trevor Lawrence, Bart., Burford Hill, Dorking. A plant of *Calanthe Dominii* was in splendid health; it had eight fine spikes of rosy lilac flowers—cultural certificate. *Odontoglossum Rosalia*, a fine plant. *Mormodes pardinum* had one spike of golden flowers; and *M. luxatum eburneum* had a similar spike of large creamy white flowers. The last-named received a first-class certificate. Mr. W. Miles, West Brighton Nurseries, Cliftonville, sent a basket of *Mignonette*; the plants were well grown, and received a vote of thanks. Pink Lord Lyons from the Society's gardens had very fine pale purple flowers; also *Dianthus multiflorus*, a very dwarf plant with rosy red flowers, and well adapted for border culture.

Messrs. Veitch, of the Royal Exotic Nurseries, King's Road, Chelsea, received a first-class certificate for a perfectly double *Azalea* with white flowers slightly striped with red. *Glove Carnation Madame Goubert* was sent by Mr. J. B. Goubert, nurseryman, Kilburn; it is a pleasing rose-coloured flower, but wanting in quality. The following productions also received the thanks of the Committee:—A hybrid Indian Pink (*Dianthus*) from Col. R. T. Clarke, Welton Place, Daventry; Canterbury Bells from Mr. R. Dean, Ealing; seedling *Violas* from Mr. E. Nash, Three Household, Gerrard's Cross, Bucks; and Foxgloves from the Right Hon. Earl of Portsmouth (Mr. Warren, gardener),

Hurtbourne Park, Whitechurch, Hants. *Iris xiphioides* var., a species with very bright blue flowers, was sent by the Hon. and Rev. J. T. Boscawen, Lammoran, Probus, Cornwall.

SNAILS DESTROYING WALL FRUIT.

I HAVE some Nectarine trees growing on my garden wall, at a point where its opposite side faces a neighbour's ground. My neighbour's side of the wall is densely clothed with Ivy, from which legions of snails issue nightly and prey on my Nectarines to their complete destruction. My neighbour will not remove his Ivy, and I can devise no means of checking the ravages of the snails, for though I kill a few of them every evening I cannot wage war on them all night, and the havoc goes on in spite of all my efforts. I should be greatly obliged if any correspondent of the *Journal of Horticulture* could suggest an effectual remedy.—P. M.

ROYAL BOTANIC SOCIETY.

JUNE 21st.

THIS, the second summer Exhibition, was held under the auspices of a brilliant day, the heat being almost overpowering. The schedule was comprehensive, numbering sixty-nine classes—twenty-nine for plants, fourteen for Roses and other cut flowers, and twenty-six for fruit. The limited time at our disposal precludes anything more than a cursory glance at the Exhibition, mentioning only its leading characteristics, and giving the awards as far as we could obtain them.

PLANTS.—These were arranged under the large marquee, which was quite filled with specimens generally of high quality, and the effect produced was one of great beauty. The semi-circular group from Messrs. Veitch was composed of plants rich, rare, and beautiful. In this group *Oncidium crispum flavum* was conspicuous by a noble spike of orange-brown flowers. It appears to be intermediate between *O. crispum* and *O. Marshallii*, and is decidedly an acquisition of considerable importance. Near this group was an effective collection, mostly of hardy plants, from Mr. Parker, Tooting. Messrs. E. G. Henderson & Sons arranged a group of Palms and very fine *Calceolarias*, fringed with *Dactylis glomerata latifolia aurea*, which was very effective, overhanging the grassy bank. Mr. B. S. Williams had also a large and excellent collection. Mr. Bull had also a fine collection of the new plants for which he is famed. *Ixora Regina* in this group was in great beauty.

The classes were well filled with capital examples of culture. The *Pelargoniums*—shows, fancies, and zonals—included many superior specimens, and the *Oreohids* were very extensive and unusually fine, numbering over a hundred plants in superb condition. Heaths were good but small, and stove and greenhouse plants of the usual London-show character.

In *Pelargoniums* the successful exhibitors amongst nurserymen were Mr. Turner and Messrs. Dobson & Sons, and amongst amateurs Mr. King, gardener to R. Few, Esq., Woolsey Grange, Boker (who was first in both the classes for show and fancy kinds), Mr. James, and Mr. Weir. Mr. Ward had the premier position in the open class, Mr. Turner being second, and Messrs. Dobson & Sons third. For zonals Mr. King was first; Mr. Catlin, gardener to Mrs. Lermite, second; and in the nurseryman's class Mr. Meadmore, Romford, had the third prize.

In Palms Mr. B. S. Williams and Mr. Ley, and Mr. Butler, gardener to H. H. Gibb, Esq., secured the prizes in the order named.

For six stove and greenhouse plants Mr. Donald, gardener to J. G. Barclay, Esq., and Mr. G. Wheeler were placed as named. For fine-foliated plants the awards were as follows:—Mr. Donald, Mr. Mill, gardener to H. Taylor, Esq., Mr. King, and Mr. Butler. In the nurserymen's class Mr. Williams and Mr. Ley were placed in the order named. For twelve stove and greenhouse plants the successful exhibitors were Mr. Ward, Mr. Donald, and Mr. Toms. In the nurserymen's classes the prizes were divided between Mr. Williams and Messrs. Jackson and Sons. The exhibitors in these classes also took the prizes for Heaths.

In the amateurs' class for twelve *Oreohids* the prizes were awarded in the following order:—First, Mr. Denning, gardener to Lord Lonsborough; second, Mr. Ward; third, Mr. Salter, gardener to W. Cobb, Esq.; fourth, Mr. Heims. For six plants the prizes went respectively to Mr. Douglas, gardener to F. Whitbourn, Esq.; Mr. Ward, and Mr. Heims. In the nurserymen's classes the prizes went to Mr. B. S. Williams and Messrs. Jackson & Sons, who exhibited excellent collections. This display of *Oreohids* was perhaps the finest that has been seen this year.

ROSES.—Of these upwards of thirty boxes were staged and five baskets; but it is clear by the irregular size of the blooms that the Rose season has scarcely arrived. Mr. Turner was placed first for forty-eight varieties, three blooms of each, Messrs. Paul & Son being second; they occupied the same

position in the class for twenty-four varieties, and also in the open class. Mr. Chard, Clarendon Park, was also a successful exhibitor. For yellow Roses Mr. Turner, Mr. H. Hooper (Bath), Mr. J. Bolton, gardener to W. Spottiswoode, Esq., and Mr. Chard were placed in the order named, as they were also in the classes for red and white Roses. For baskets of Roses first prizes were awarded to Mr. Turner and Messrs. Paul & Son, and second prizes to Mr. Soder, gardener to O. O. Hanbury, Esq.

Amongst hardy flowers the cut collections of Irises from Messrs. Hooper & Co., Covent Garden, and Mr. Chard, Clarendon Park, Salisbury, were magnificent. In colours and markings no *Oreohids* can possibly be richer or more chaste than these fine hardy flowers. In greenhouse cut flowers Mr. Bolton, gardener to W. Spottiswoode, Esq., Combe Bank, Sevenoaks, and Mr. Wheeler, gardener to Sir F. Goldsmid, were the successful exhibitors, Mr. Roberts and Mr. Wheeler exhibiting in the hardy class. *Armeria plantaginea* in Mr. Wheeler's collection was very attractive. The principal prizes for hardy flowers went to Mr. Parker, Mr. H. Hooper, and Mr. Perkins, Leamington.

FRUIT.—The corridor was only about half filled, yet some capital fruit was staged. Seventeen Pines were exhibited, the fruit generally being small but good. For two Queens Mr. Ward, gardener to T. N. Miller, Esq.; Mr. Harris, gardener to Mrs. J. H. Vivian; and Mr. Bond, 'The Beeches, Weybridge, were placed in the order named. Mr. Ward was also first for one Queen, Mr. Mills being second, and Mr. Harris third. For any other variety Mr. Ward, Longford Castle, and Mr. Douglas secured the prizes.

Grapes were very fine, five baskets of white and eight baskets of black Grapes being staged, all highly creditable contributions. For blacks Mr. Akhurst, gardener to S. Copestake, Esq., Mr. Kay, and Mr. Douglas were the winners; and for whites Mr. Grimmett, gardener to J. Wilmot, Esq., Mr. Douglas, and Mr. P. H. Kay. In the classes for three bunches thirteen stands of white Grapes were staged, and fifteen stands of black Grapes, the berries being noteworthy for their uniform size and admirable finish. For Black Hamburghs Mr. Akhurst; Mr. Nash, gardener to the Duke of Beaufort; and Mr. Douglas had the prizes; and for other black kinds Mr. Grimmett with Madrasfield Court, and Mr. Douglas with Royal Ascot, both very superior, were placed in the order named. For whites (Muscats of Alexandria) Mr. Robins, gardener to E. Dyke Lee, Esq., Mr. Grimmett, and Mr. Douglas were placed in the order named. For any other white kind Mr. Douglas was first with Canon Hall Muscat, well set and fine; Mr. R. Sowerby being second with an unnamed variety; and Mr. Sage, Ashridge, third with Foster's White Seedling.

There were half a dozen good dishes of Strawberries, Mr. Douglas being first with splendid fruit, Mr. Phillips second, and Mr. Kalle third; and the same number of dishes of Cherries, Mr. Miles, gardener to Lord Oarlington, being, as usual, to the front with Black Circassian and Bilton; Mr. Ward, Longford Castle, and Mr. Chard having the remaining prizes. Five dishes of Peaches were exhibited, and the same number of Nectarines, the quality of the fruit, saving one dish, being uniformly good. Mr. Sage, Ashridge, and Mr. Shrimpton, gardener to Lady Rothschild, had the prizes for Peaches; and Mr. Woodbridge, Lion House, and Mr. Miles for Nectarines.

There were seven dishes of Tomatoes, Mr. Miles's including "Large Red" and Stamfordian, the former being the largest and smoothest fruit. Mr. Douglas had Carter's Green Gage in splendid condition, and showing to advantage between the glowing scarlet of Orangefield and Excelesior. Good dishes of Figs came from Mr. Sage, Ashridge Park, and Mr. Miles.

A particularly noteworthy dish of twenty pods of *Vanilla planifolia* was exhibited by Mr. Woodbridge, gardener to the Duke of Northumberland, Lion House. The pods were about 8 inches in length, perfectly ripe, and filled the air with their fragrance.

Only five Melons were shown, a nice pair coming from Mr. Wildsmith, Heckfield, and another pair from Mr. Ward, Longford Castle, Mr. Sage staging a single fruit of Gold in perfection in the class for weight. These exhibitors, with Mr. Mearns, secured the prizes.

Botanical certificates were awarded to Messrs. Veitch for hybrid *Rhododendrons* Princess Frederica, Prince George, and Prince Leopold, also to Madevallia Davisii; to Mr. Bull for *Ixora Regina*, *Hibiscus Collierii*, *Smilax Shuttleworthii*, *Maranta Massangana*, *Aralia splendens*, *A. spectabilis*, *Artocarpus Cannonii*, *Oreton Mortii*, *Dracena insignis*, and *Dieffenbachia Shuttleworthii*; to Mr. B. S. Williams for *Rhopala pubescens*; and to Messrs. E. G. Henderson & Sons for *Dactylis glomerata latifolia variegata*. We were unable to wait for the floral certificates and extra prizes, but noticed that Mr. Turner and Mr. Foster submitted remarkably fine new show *Pelargoniums*; Mr. Burley, Brentwood, new zonals; Mr. Bull, new double Ivy-leaved varieties, Model and Excellence; and Messrs. Harrison and Son, Leicester, a new *Mimulus*, a decided cross between *M. moschata* and *M. maculata*, having the large spotted flowers of the former and the Musk-scented leaves of the latter; Mr.

Rumsey, Waltham Cross, Lobelias, *L. compacta purpurea* being a distinct and promising variety; and Mr. Miles, West Brighton Nursery, Cliftonville, a very fine variety of *Mignonette*.

H.R.H. the Princess of Wales and the Duke and Duchess of Teck honoured the Exhibition by their presence, and examined minutely and greatly admired the several collections, and it must be admitted that the display was worthy of their patronage.

The plants were artistically yet conveniently arranged, reflecting credit on the new Superintendent, Mr. Coomber.

NOTES AND GLEANINGS.

CONSIDERING the perfect hardiness of *GHEENT AZALEAS*, and their free-growing and free-flowering properties, also their varied and distinct colours, it is surprising that they are not more freely planted in gardens and shrubberies. No shrubs are more effective than these during the spring months. For affording cut sprays they are also very valuable, the soft colours of the flowers and bright green fringes of foliage rendering them highly attractive. Many of them are also, as a lady admirer of them recently remarked, "as sweet as the Honey-suckle."

As will be seen on reference to our advertising columns the HEREFORD ROSE SHOW has, on account of the backward state of the Roses, been postponed to July 13th, the entries closing three days previously. By this judicious alteration it is hoped that a display equal to those of previous years will be produced. Messrs. Cranston & Mayos announce that they will give a silver cup value fifteen guineas (in addition to the Society's prize of £5) for the best thirty-six varieties of cut Roses exhibited at this Show.

A CORRESPONDENT informs us that a "TEA TREE" (*Thea bohea*) has endured the winter uninjured in his garden in Surrey. This we may inform our friend is not an unusual occurrence, for this shrub will probably pass uninjured our ordinary winters in the south of England. We lately saw a specimen of this shrub in the small but interesting garden of Dr. Rogers at East Grinstead, which had been growing on the lawn for more than twenty years without receiving any protection whatever.

A CLERGYMAN in Lincolnshire writes to say that his greatest friends in the garden, especially during the spring months, are a pair of "PEEWITS." These birds, he states, hunt out the snails and slugs from amongst the Strawberries and young seedlings of all kinds, and effectually prevent any injury being done to plants or fruit. For two years he was without peewits, and the slugs increased to such an extent that he could scarcely pick sound Strawberries, but since procuring more birds he has had no more "slug grievances." He finds the peewits superior to both young ducks and seagulls as foragers for grubs, the birds being ornamental as well as useful, and are special favourites of the old as well as the young members of his family, and are also "highly respected" by his gardener.

We are informed that in a recent consignment of Orchids Mr. BULL has received a large number of *ODONTOGLOSSUM VEXILLARIUM*—a fortunate addition to his collection, and arriving at an opportune moment.

THE BEDDING at the CRYSTAL PALACE promises to be highly effective during the present season. The planting of the beds, which has been deferred in consequence of the cold weather, is nearly completed, and the plants being of large size and well prepared will be attractive at once. The design around the roseroy is somewhat similar to that of last year as to pattern, yet is distinct by the *Geranium* groups being bolder. The sorts relied on are Waltham Seedling as a crimson and *Oleopatra* as a pink. The triangular spaces between the *Geraniums* are furnished with *Iresine Lindenii*, and the scollaps in front are being filled with *Alternantheras*, edged with *Echeverias*. The two large scroll-shaped beds at the foot of the central landing of the terrace are planted in the carpet style, and are particularly free and smooth in design. Yellow is afforded by *Crystal Palace Gem* and *Robert Fish* *Geraniums*; neutral colours, which are ample, being provided by broad grey bands of *Veronica incana* and the more silvery hue of *Leucocorydon Brownii*. In these beds succulents in variety are introduced, including small circles of *Sempervivum arboreum variegatum*, which is one of the most beautiful of the family. The *Tagetes*, which in previous years has been so pleasing as a green groundwork, is not used this year in consequence of the labour involved in trimming; but its place is taken by dwarf *Saxifragas*, which have been fully tested as suitable for

the purpose. The chain beds are planted alternately with scarlet, white, and pink *Geraniums*, *Lady Constance Grosvenor* having been selected as the most suitable scarlet. The whole of the plants employed have been raised by Mr. Thompson in the nursery department of the Palace.

THE CRYSTAL PALACE ROSE SHOW, which was announced to have taken place on the 16th and 17th inst., was not held, for the sufficient reason that scarcely any Roses were in flower even in the south of England. It can scarcely be said that the Show was postponed, for in the latest issues of the horticultural press notifications were issued for the Show being held on the dates named. In consequence of this we know that useless visits were made to the Palace, and more than one correspondent have requested that their disappointment be recorded. It has for some time past been perfectly clear to those particularly acquainted with Rose culture and the backward state of vegetation, that a show worthy of the Palace could not be produced on the days named, and no small surprise is expressed that the postponement of the Exhibition was not officially and timely announced. The Show is to open on the last day of this month, when it is to be hoped that a display equal to the grand gathering of last year will be produced.

THE report of the Committee of the CITY OF LONDON FLOWER SHOW for the past year has just been issued, from which it appears that the annual exhibition of plants and flowers held in the gardens of Finsbury Circus in July last proved a great success, exceeding all its predecessors both in the number of plants exhibited and in their mode of culture. The Chairman of the Committee is the Rev. William Rogers, Rector of Bishopsgate; and among its supporters are the Baroness Burdett Coutts, the Baroness de Rothschild, the Right Hon. the Lord Mayor, M.P., the Right Hon. J. G. Hubbard, M.P., and others. The Rev. F. Bishop is the Hon. Secretary, and all communications should be addressed to him at the Schools, Bishopsgate. The residents of Finsbury Circus have again granted the use of their gardens for the flower show to be held next July, and it is expected that H.R.H. the Duchess of Teck will then distribute the prizes.

IN A MAP OF LONDON of the date 1560 all the district north of Holborn is shown to have been then fields and gardens; one large garden extends the whole length of a lane that was where Ely Place is now. The district then was noted for the production of Strawberries and Roses. Shakespeare in his "Richard the Third" only slightly altered these words of Hall the chronicler when he wrote this dialogue between the Protector and the Bishop of Ely. "My Lorde, you have verie good Strawberries in your garden at Holborne, I require you let me have a messe of them." "Gladly, my Lorde; I would I had some better thing as redy to your pleasure as that." "And with that in all haste he sent his serraunt for a dish of Strawberries." As to the Roses there, Lord Chancellor Hatton held his estate, now commemorated by Hatton Garden, by paying yearly £10 and a red Rose on Midsummer day; and its former owner, the Bishop of Ely, also reserved the right of "walking in the gardens and gathering twenty bushels of Roses yearly."

OUR BORDER FLOWERS—STAR OF BETHLEHEM.

ORNITHOGALUM UMBELLATUM, the Star of Bethlehem, will bear a good deal of hard usage. It flourishes in moist borders and in partial shade among trees and grass. Its dwarf habit and lovely white flowers make it desirable for what is termed wilderness scenery.

There are a few others of this charming family that are to be met with occasionally, and though some of them were introduced many years ago, they do not appear to be in general cultivation. I cannot conceive why a plant like *Ornithogalum fimbriatum* has been so long in the background; it ought to be met with in every garden, for it is a "gem of the first water," of dwarf habit and an early bloomer. *O. narbonneense* is of taller habit, and when well grown attains the height of 2 feet, and requires staking to keep it from being broken with the wind. It continues in bloom for a considerable time, and when grown in masses has a grand effect. *O. aureum* and *O. biflorum* are very desirable; they are of dwarf habit, having yellow flowers, and contrast well with the white varieties. *O. arabicum* flowers in late spring and early summer; it is one of the tallest of the tribe. *O. thrysoides* is a charming addition to a selection; it is not so well known as some of the

others of the family, nor nearly so much as it ought to be. *O. exscapum* is one of the least of the family, but should not be passed by on that account. *O. pyrenaicum* with its greenish-yellow flowers is one of the taller-growing kinds, and well deserves a place in the herbaceous border. *O. comosum* is a dwarf summer-blooming species, and should be much more sought after than it is. *O. nutans* with its large drooping flowers is one of the best; it flowers in early summer. There are others of this interesting but neglected family of border flowers that are capable of doing us good service in many ways and places. They are adapted for pots and borders, and being quite hardy require but little care.—*VERITAS*.

CHAPTERS ON INSECTS FOR GARDENERS.

No. 9.

At this season of the year many of the species of the Hemipterous order, which is next before us to consider, are in a state of full activity. Some species very prolific in individual members are not much known or noticed owing to their retired, or perhaps sedentary habits, yet they are quite capable of producing perceptible damage on vegetation. To parody the line of a poet, we might say they "do harm by stealth, and blush to find it blame." At least, if they do not blush they have a way quite as satisfactory to themselves of letting their feelings be known. In fact, numerous species of the Hemiptera have a knack of discharging a defensive, and occasionally offensive fluid, when they are roughly handled, or even simply touched. A very familiar species is just now covering hedges and scattered shrubs with its almy exudation, venturing at times also to display itself on the lower branches of stately trees. This is the Cuckoo-spit (or as a friend puts it, "Cuckoo-spite"), scientifically called *Aphrophora spumaria*, the salivary aspect of which disgusts persons who are unconscious that it is simply the sap of the plant, into which the creature ingeniously works air-bubbles for its defence. This is possibly the best known of all the Hemipterous race, at least in so far as its outer surroundings, saving and excepting an unsavoury insect, the name of which is not breathe in polite society, and against which good housewives take various and frequently ineffective precautions during the summer season. It has afforded much matter for speculation to a certain class of natural philosophers, one of whom assures that this disturber of nightly repose was undoubtedly created long after man, for it does not attack him in a solitary and savage state, but haunts him in cities and communities. It is probable that the primitive nutriment of *Cimex lectularius* was the juices of wood, and its resort to blood arose from a freak in the first instance. From its occurrence in profusion now and then in circumstances where it can have had no chance of attacking either man or animals, it must be assumed that the species is not obliged to be a blood-sucker.

But the mention of this unloved domestic insect is appropriate, because it has passed into a designation for the majority of the species of the Hemipterous order that are of any size. These are popularly called "bugs," and the more diminutive species "lice." Incorrectly, we might say, on philological grounds, for the old Anglo-Saxon word "bug" meant an object of terror; hence we read in one early English version this rendering of a passage in the Psalms, "Thou shalt not be afraid of any bugs by night;" and on its introduction here this Hemipteron was called a bug, not, as it has been too hastily assumed, because people were afraid of it, but because the bites were imagined to be symptomatic of some virulent disorder. Be that as it may, it is in vain now to seek for another English name for the order, and in one sense 'tis true enough it contains many insects which cause apprehension to the horticulturist from their united action, no matter whether we call them bugs, lice, or some other name. Direct enemies to man are few in the order, but it includes a host of formidable pests to his garden. Several of the aquatic species of Hemiptera are predacious, and ferocious enough to their kindred as well as to strangers of the insect race; yet nearly all the land species are pacific, one might almost say amiable in disposition. No order, I think, save perhaps the Lepidoptera, has so few insects in it that are friendly to the horticulturist by reason of their labours helping to keep under destructive species; and the only division affording an article of commercial value is that section of the genus *Coccus* which in tropical or subtropical climates yield the varieties of cochineal and lac.

Now, if we take as representatives of this order two sizeable

insects, such as the adult Cuckoo-spit or Frog-hopper (*A. spumaria*) and the common grey bug found on shrubs and low plants called *Pentatoma grisea*, without the aid of a magnifier we at once perceive that these are sucking insects, the mouth being in the form of a beak, which in repose is generally turned down on the breast. The closer examination we can make by a hand-glass shows this beak consists of an upper and lower portion, the upper lip, which is the actual implement, resting in the lower lip as in a sheath; and four bristly or thread-like appendages, which in some species can pierce like lancets, represent the mandibles found in other orders. The wings are four, rather leathery in texture, and more or less roof-like when folded. In the history of the transformations it is especially to be noted that the larva is in many species exceedingly like the perfect insect, excepting of course the possession of wings. The pupa is generally able to travel about and take care of itself. Amongst certain groups, as in the aphid tribe, there is little distinction observable between the three stages of development, the similarity being increased by the occurrence of wingless females and the non-appearance of males through a great part of the summer. Though wishing to avoid abstruseness, I must briefly state that the order Hemiptera is divided into two large sections, occasionally referred to as distinct orders. Following the natural arrangement I take first the sub-order which comes next to the flies, and discuss the Heteropterous bugs. Two circumstances immediately indicate the propriety of the separation of these sub-orders; for the Heteroptera, we see, have invariably the wings dissimilar, the hind wings are clear and transparent, the fore wings have half thickened and half membranous, as is well seen in the genus *Pentatoma* already referred to. The second distinction is, that in this sub-order the beak or proboscis is attached to the fore part of the head. Some of the land species have long antennae; in the aquatic species they are mostly short and nearly hidden. A curious adornment observable in many of the species haunting plants is in the form of a scutellum or shield, which sometimes nearly covers the whole of the abdomen, and we must again break up the Heteroptera into two groups; the *Hydrocoris*, with legs adapted for rowing, and resident in the water of ponds and streams. Here are classed objects familiar to us in the fresh-water aquarium—the ravenous water scorpion (*Nepa cinerea*) looking like a brown decaying leaf; the excessively slim *Ranatra linearis*, which appears as if it could require scarcely any nutriment, but is a determined killer of small aquatic creatures; and the active water boatman, which might have suggested to primitive man the construction of oars, belonging to the genus *Notonecta*, all being predatory. A funny little creature, too, is *Ploa minutissima*, with a broad back and short legs, yet able to swim capably.

Hurrying on to the bugs which are chiefly represented in our gardens, classed under the head of *Aurocoris*, we can specify nine families, several containing a variety of species which feed on the juices of plants, yet none that can be said to have a seriously prejudicial influence. Two families are aquatic or semi-aquatic, about which little need be said. The *Acanthidae* are small globular fellows, generally found on the muddy banks of streams, and with the faculty of hopping, though able also to fly. Very different are the *Hydrometridae* or *Water-measurers*, remarkable for the celerity with which they glide over the surface of stagnant water in pursuit of their prey. They are not endued with skates certainly, but the form of the body (long and slight), the slim angular legs, and the muscular force in limited compass, admirably suits their mode of life. *Hydrometra stagnorum* is a common species, almost thread-like, with eyes which seem to start from the head. In the third family (the *Beduviidae*) are some singular insects, one or two genera with undeveloped wings, all having the back of the head narrowed, and exhibit a stout curved beak, with which they will occasionally wound the human skin if grasped. Few visit gardens, but one species (*Beduvius personatus*, not very abundant) is fond of haunting places frequented by mankind, where it is supposed to prey upon smaller insects, by report having a particular penchant for *Cimex lectularius*. To enable it to make a close approach to winged insects without alarming them it masks itself in particles of dust and wool, assuming also a peculiar gait, which De Gea thus described:—"It walks as fast when it likes as other bugs, but usually its gait is slow; after having taken one step forward it stops awhile and then takes another, leaving at each movement the opposite leg in repose; it goes on so continually, step after step in succession, which gives it the appearance of walking as if by jerks. With the antennae it makes almost the same sort of movement in

measured intervals." Of the fourth family—the Cimicidae, only containing four species—it will suffice to say that the best known of these is the bed-bug, wingless as are its brethren. In the Tingidae group we have a number of insects, mostly feeding on plants; these are small insects with flattened bodies and a short three-jointed beak. Several genera have a fine tracery like network on the wings and thorax. No species is, I believe, so far individualised to the gardener as to need that it be referred to, nor can it be asserted that these bugs do harm to vegetation in field or garden. Of the Capsidae, also small and more delicate in appearance, we cannot speak so favourably, since many of them bear an evil report, pretty as they are. The family is distinguished by long antennae,

vases. In several species the pupae hibernate in parties on the most sheltered position they can discover. *Pyrrhocoris apterus*, from the scarlet ground colour on which are a couple of black spots, has been called the scarlet bug. It must, however, be distinguished both from the red spider and a scarlet *Acarus*. It will be seen on examination to possess wings, though they are imperfectly developed. On the south coast of England it has occasionally been noticed in large numbers. In the eighth family the Coreidae is observable for including species which can run and fly briskly as well, such as those in the genus *Velusia*; they possess also the power of making a loud humming sound. *Coreus hirticornis* is wrinkled all over, and the wings in several species are covered with

wrinkles or punctures, and it has the antennae fringed with hairs, hence the name. The little *Cymus Reseda*, with a red head and yellow body, is often busy on *Mignonette*; why, it knows best. But all in this family are presumed to live on the juices of plants or on honey, taking their excursions frequently in the bright sunshine.

The last family of the Aurocoria, the Scutelleridae, has representatives which are no strangers to the gardener, and are much disliked by him, though the harm they do is not proportionate to their size. Popularly called, from the peculiarity of their shape, "bishops' mitres," or simply "bishops," these bugs have the propensity, like various others, of giving forth a strong odour, which adheres to any article they may crawl over. Hence they may thus infect the fruit they attack; but it must be stated that in many species this faculty is sparingly exercised unless the insects are in danger from some enemy. All in this family have a large scutellum or shield extending over the abdomen; the beak and the antennae are long. The fifteen species of the genus *Pentatoma* are regaling themselves freely this month, continuing out until autumn, and, doubtless in this, as in the other families, the larva and pupa occur in the same spots as the imago, though more rarely seen. Several species are partial to Cabbages and Crucifers, and a friend to the order hopes that they, under certain circumstances, devour insects troublesome to the gardener. Of this however, there is no evidence.

Pentatoma grisea in its various stages is well represented

in the accompanying engraving, which has been obligingly supplied by Messrs. Cassell & Co.—C.



Fig. 135.—*PENTATOMA GRISEA*.

also by the shape of the horny part of the hind wings, which form a triangular ridge. A proportion of the eighty species in this family are occasional visitors to gardens and conservatories, some of the species seemingly having a liking for warmth. As they have nearly all the power of emitting a liquid of disagreeable odour their absence rather than their presence is desired by the fruit-grower, who finds them sometimes inausidiously attacking choice specimens, though they seldom come in swarms. If alarmed they generally drop to the ground unless they can run to a hiding-place near at hand. The *Lygaeidae* are also small and slender, banded or spotted. *Lygus equestris* is a showy species, marked with red, black, and white. Some species of the genus *Gastrolepis* have the thighs of the fore legs considerably thickened, suggesting a capacity for springing. These bugs are less partial to the juices of fruits, occurring on low plants usually, some of the species having a great attachment to plants of the order Mal-

ODONTOGLOSSUM VEXILLARIUM.

"QUEEN amongst Orchids" was the term justly applied to this magnificent plant when it was figured in the "Botanical Magazine" in 1873. It is not only a plant the flowers of which are of surpassing beauty, but it is an Orchid for all Orchid growers, the plant being of easy culture, producing its flowers profusely. In our description of this Orchid when it was first exhibited, we stated that "such skilful cultivators as Messrs. Veitch will yet astonish the world horticultural, as the plant grows stronger, with an as yet undreamt-of development of its beauties. The colour is a beautiful soft lilac rose, with the base of the lip white and yellow. Poor David Bowman who went out a few years ago as a botanical collector to South

America, and, like so many others who have trodden the same path, perished in enriching our gardens, was the first to discover it on the Andes of New Grenada. Subsequently Wallis and Roesl sent home plants, but they all died either before or



Fig. 126.—*ODONTOGLOSSUM VEXILLARIUM*.

shortly after arrival, and it was left, we believe, to a Mr. Chesterton to have the honour of introducing the specimens to Messrs. Veitch. This *Odontoglossum*, even in its present state, is magnificent, and yet nearly all Orchids on their first

introduction give but a feeble idea of what they ultimately become. What, then, will this be?"

The time that has elapsed since the above was written has brought an answer to the closing query of that report. The plant had then four flowers, but a plant has now been exhibited with ten times that number of flowers. When Professor Reichenbach first directed attention to this plant in the *Gardener's Chronicle* of 1867 he described it as a "wonderful beauty," which he hoped would "one day appear at South Kensington." Plants have since appeared at South Kensington in all their magnificence. Messrs. Veitch have exhibited them in splendid condition and in great variety, but the honour of producing the grandest example which has hitherto been brought before the public rests with Mr. Richards of Gunnersbury. From one pseudobulb of Baron Rothschild's plant more than forty flowers were expanded. Mr. Danning has also grown this plant well, and Mr. Ward has exhibited it in superior condition. Mr. David Thomson's recent remarks will also be remembered of his growing a plant of *O. vexillarium* "in a pot about the size of a breakfast cup with sixteen flowers on one bulb, some of the flowers measuring $3\frac{1}{2}$ by 8 inches in diameter, the colour being a rich glossy pink with a pure white centre and yellow-pencilled eye, forming the most captivating object imaginable." There is great variety in the colours of the flowers of this *Orehid*, and also in their size and shape; but all are beautiful, and a plant or plants should be grown by all who have a house wherein the minimum winter temperature of 45° to 50° is provided, for the plant flourishes perfectly well in a cool house. The accompanying figure is a correct representation of a small spray of this "Queen amongst *Orehids*," and is submitted at a time when its worth has been fully established, and also when plants are sufficiently plentiful to be offered at prices which must ensure their still wider distribution.

BIG SHOWS.

WITH much that has been written on shows by "RADICAL CONSERVATIVE" I agree. We are worshipping the idol of bigness—I do not say greatness, for that includes merit. Bigness may include it, but whether it does or not does not appear to be of prime importance. I have not one word to say against large plants (if they are good) or large prizes (if they reward merit and foster horticulture), but I object to bigness going for more than it is worth and having such a high place of honour in the estimation of critics. It is not uncommon to hear such remarks and read such sentences as these—"The quality of the show was good, but (as if disparagingly) it was not a big show." "The prizes were very liberal, but (again disparagingly) the plants were not large" (big).

Now there can be no doubt whatever that "bigness" is occasionally overestimated and rewarded at the expense of quality. Take, for instance, Azaleas, Pelargoniums, Heaths, and other plants; they are big because they are old, but they are not better, as expressing cultural skill, than are smaller well-grown plants, while the latter embrace modern and improved varieties. Awarding the same honours to the same plants year after year, and chronicling their names in the press over and over again for a dozen years consecutively, would seem to have become the (horticultural) law of the land. I say nothing against those preserving these elephantine plants in good health being rewarded, but quoting the names of the plants continually is akin to a paragraph of "news" telling us that an express train runs from London to Edinburgh daily, or that Bristol is connected with the metropolis by telegraphic communication. The tendency of the day is to honour and ennoble the big and to forget the strictly good if not connected with mere size. I am led into these remarks from what I have read, what I have heard, and what I have seen.

The popular standard for an exhibition would appear to be that it must be a "big show"—the biggest show that has ever been held in —. To this end attractions are held out inviting competition. Large prizes are offered (quite right), and the public are expected to crush in in their thousands to view the monster treat, and repay the promoters for their spirit and enterprise. That is the object of these shows, and it were a pity that the objects sought should not be attained. Every undertaking which (whatever its primary object may be), results in inculcating horticultural tastes is worthy of success, but unfortunately the public is not sufficiently interested in horticultural pursuits as to congregate in their thousands and support the objects of the promoters of shows in making even big prizes and big plants "pay." According to the present

tastes of the public, where ten persons will saunter to a flower show a thousand will rush to a race.

From a horticultural point of view the standard of bigness and the mere object of making money is a low standard. Real horticulturists look primarily to quality, variety, and an improvement in the art in which they are interested being fostered and encouraged. They would rather promote the culture of that which is neglected, and seek to bring out and reward that which is meritorious, than cause a sensation by a mere gigantic display, and rely on an unappreciative public to appreciate it.

Like your correspondent on page 452, I am of opinion that shows in London are becoming too numerous. I have both heard and seen sufficient to lead me to this opinion. The competition (what an unpleasant word that is in connection with "societies"), is not promotive but I fear rather preventive of the solid and healthy progress of the art. The efforts that are being made by those whose great object is the fostering of horticultural taste, the advancement of horticultural pursuits, and the perfecting of all that relates to the art, are not productive of the good that is desired. Similarly the efforts of those whose object is bare! on different lines have not the response which the big shows and big prizes were expected to command. The cause of this is, what for want of a milder term must be termed the antagonism of societies, and the consequent racing and competing policy leading to a multiplication of shows, and struggling that each should be "big." So closely are the shows together that it is impossible that the public appetite can be so sensitive as it otherwise would be with longer intervals of "rest."

It is not in the nature of things either that the plants, good as many are admitted to be, and rare as are each year's novelties, can sustain their interest under the constant repetition of their being exhibited. A rare plant loses in a measure its rarity by being continually seen and written about, and the new almost savours of age during the first season of its introduction and parade. Establishments private and public are seldom furnished by the constant claims of the several shows, and complaints even from nurseries are heard of having nothing to show to visitors. So closely are shows together that even a week can scarcely be found to divide them, and now and again two or three are crowded into the same day. How is it possible with this state of things that shows can flourish, and that the art they represent can be strengthened and adequately supported? By too frequent shows the public interest is deadened instead of being sharpened, and both exhibitors and visitors become languid by the continual calls on their support and presence.

The remedy is fewer shows and better—better in freshness, in quality, in novelty, and in prizes. Take, for instance, the two Societies whose entire aims and objects are to encourage and promote the science and practice of horticulture—the Royal Horticultural Society and the Royal Botanic Society. Would not their shows be better (good as they have been this season) if their two spring shows were merged into one, doubling the prizes? and the same in regard to summer shows. It is to these Societies after all that we must look to, as their objects are not to enrich themselves but the profession of which they are the natural and legitimate exponents. It is only by limiting the number of shows that they can really be made great shows—great in quality as well as in size, and also calculated to command a greater amount of public interest. This is what is wanted—the creation of livelier horticultural interest.

Provincial shows are frequently more successful than metropolitan exhibitions, because the former are less numerous; than the latter, and the attention of horticulturists in given localities is centred on one date and display instead of being diluted and divided over a dozen. I write as a horticulturist having but one desire—the prosperity of the art from which I derive so much pleasure, and which is calculated to be of great public benefit.—F. H. S.

ABUNDANCE OF THE CATERPILLAR OF THE BROWNTAIL MOTH.

I NOTED in the Journal last year the profuse occurrence of the caterpillars of the Browntail Moth (*Liparis chrysorrhæa*) in the vicinity of Gravesend. At that time I expressed a doubt whether their destruction was justifiable; but I am now inclined to think it is an insect that ought to be kept under when it appears plentifully in any locality. Last season the cater-

pillars were principally confined to two spots—near the Ship and Lobster tavern on the banks of the Thames, and along the Old Dover Road, near the village of Chalk. Now, however, they are distributing themselves along the Hawthorn hedges in various directions; and though by natural habit the species does not seem much inclined to migrate far, the caterpillars are carried along by the wind occasionally, and when once deposited in the road they will then go “on the tramp” for a good distance. Ordinarily they are so attached to the bush on which the parent moth has deposited her eggs that they will gnaw the twigs after the leaves have been stripped rather than quit it; and I have even observed signs which seem to imply cannibalism, an unusual thing amongst hairy larvae. On mixed hedges, urged by necessity, some of the caterpillars have passed from the defoliated Hawthorns to Elms, Blackthorns, Maples, and even to a plant so different as the Buckthorn. This indicates an adaptability of habit, which renders it quite likely the species might turn out to be a formidable foe to our fruit trees. I suppose there cannot be the slightest doubt that on the Continent the Brown-tail is justly regarded as injurious to fruit culture, but as yet I have sought in vain for any undeniable modern instances of its doing harm in English orchards. It is curious that though the Moth is so like its congener the Goldtail (*Liparis auriflua*) that naturalists might almost mistake one for the other, yet the larvae of the two are markedly different in appearance. *Liparis auriflua*, the Goldtail, too, does not form social nests during the winter.—J. R. S. C.

STUDLEY ROYAL.—No. 2.

THE SEAT OF THE MARQUIS OF RIPON.

In the kitchen garden there are very extensive ranges of forcing houses. Pines are well grown in large lean-to houses similar to those at Frogmore, but after the present batch of succession and fruiting plants have been fruited no more Pines will be grown at Studley. The plants that are now fruiting are very creditable examples.

The vineries are very large, and the Vines give evidence of skillful culture. It is quite evident that Grape-growing is a speciality with Mr. Clark, as all the best new and old sorts are grown. One sort that does remarkably well here, but which is a partial failure at many other places, is the Black Muscat of Alexandria. This old variety was renamed Muscat Hamburgh, and sent out as a new sort by Mr. Snow of Wrest Park, Bedfordshire, about twenty years ago. On its own roots the berries do not set well, but grafted on the Black Hamburgh stock it has produced bunches of 5 and 6 lbs. weight, with large, well-set, even-sized berries. It has been tried here on the Hamburgh stock, on the Royal Ascot, and it is also being worked on the Alicante; but by far the best stock for it (and on this it is intended to work all that are required), is the Muscat of Alexandria. At the time of my visit the bunches from Vines on this stock were giving promise of grand results this season. Mrs. Pince's Black Muscat has been worked upon Lady Downe's Seedling, but this has not proved to be a good stock for it, and my own experience has been similar to that of Mr. Clark. I worked this variety on Lady Downe's, thinking that it would supersede that excellent late-keeping sort; it was allowed to fruit for three or four years, and was ultimately removed as a failure. Mrs. Pince on its own roots does remarkably well. The bunches are large, berries large and well set, flavour very good indeed, but it is not a late-keeping Grape.

The next is a trio of white Grapes—Golden Champion, Foster's White Seedling, and Buckland Sweetwater. Mr. Clark prefers them in the order named. Golden Champion for appearance and quality combined is certainly the best, and when it is well grown no other white Grape except the Muscat of Alexandria is equal to it; but some of the best growers in the country have tried it and failed to produce good fruit. At Loxford Hall it was grown in three houses, and only in one have we succeeded in growing it well. It was cut-out from the other two houses after three seasons of comparative failure, and in every case the same stock was used—Black Hamburgh. Even in the house where it has done the best many berries have cracked and have also become spotted. As Buckland Sweetwater is grown at Loxford it is certainly the best Grape of the three. It is grafted on Black Hamburgh, and the Vine is in that part of the house where it has the full benefit of the afternoon sun. Many growers prefer Foster's White Seedling; it is certainly a useful white Grape, and well adapted for pot

culture. Mr. Clark's opinion of the more recent variety, Duke of Buccleuch, is, that it does not set so freely as Golden Champion. I have been trying to grow it since the month it was sent out, but it has not yet shown a bunch.

There are four Peach houses at Studley, and taking them together I do not remember ever to have seen better-managed trees. The wood is regularly laid-in over the trellis, as much as will be required for next year's crop of fruit. Nor are the trees at any time overcropped, and, what is of very great importance, the leaves are kept clean and free from insect pests. Seeing that Peaches and Nectarines were so well grown I was anxious to know what sorts were considered the best, and I may say that very many have been tried by budding on the old trees. Of Peaches the best early sort is Dr. Hogg, next to it comes Royal George, followed by Stirling Castle and Barrington. Mr. Clark thinks highly of a seedling he has raised from Princess of Wales, which resembles Barrington. Of Nectarines, Lord Napier, Violette Hâtive, and Pine Apple are the best and ripen in the order of their names.

Figs are grown in narrow restricted borders and in pots, and they do very well indeed in a low span-roofed house. The old variety Brown Turkey is considered the best and most useful sort. Negro Largo is also an excellent Fig and a very free bearer. A variety named Harrison's Seedling is also an excellent sort for pot culture, and though the fruit is of small size it is of good flavour. It is of the Singleton Perpetual type. White Marseilles is esteemed for its delicious flavour; it is also a good bearer and bears well. Gros Verte is also included in the list of good Figs.

Melon culture as practised by Mr. Clark is rather different from the usual practice. The plants are put out in a bed in the usual way, except that they are much more thickly placed than usual. The plants are then trained to an upright stick about 8 feet 6 inches high, and one or two fruits only are obtained from each plant. The plants are also managed so that the fruit does not come in all at once, a small house giving one month's supply. Queen Emma and Victory of Bath are two favourite sorts. The Cucumber house is a low span-roofed structure, and seems well adapted to the requirements of the plants. They were in very good health and bearing freely. I had an opportunity to examine some of the new sorts which were grown together. Sutton's Duke of Connaught is an excellent sort both for appearance and quality. It will doubtless be much grown for exhibition purposes. It is of the Tender and True type, and bears considerable resemblance to that variety. Duke of Edinburgh (Daniel's), we thought the least desirable of any. It is a coarse-looking fruit, and as there are so many good sorts that have appearance and quality to recommend them this may be omitted. Duke of Edinburgh (Monro), is a very useful sort; the fruit is small in size, which is in its favour as a winter sort. In many gardens a small house is usually devoted to winter Cucumbers, and very often one small fruit is sufficient at a time, and it is very certain that if the fruits are large a plant cannot produce so many of them. Indeed, I know one gardener who cuts half of a fruit in the winter season, and allows the other half to hang for another occasion. Monro's Duke of Edinburgh is just the sort for such a grower. Marquis of Lorne was also noted as being a very good variety, Mr. Clark has the best type of it. As I have seen it grown and exhibited it has been quite different; a spurious variety has evidently become mixed with the true sort.

From the forcing houses we take a stroll round the walls and find the fruit trees are clean, healthy, and well trained. There is a good collection of Pears grown as trained trees on walls and as standards. Beurré Rance does very well, but Mr. Clark thinks there are, to use a florist's definition, more “strains” of it than one. It is most likely that the difference in the quality and formation of the fruit is due to the influence of the stock. It has been worked on Citron des Carmes, one of the earliest Pears, but this does not hasten the ripening of Beurré Rance. A variety also grown on the wall under the name of Soldat “Desprez” [Soldat Esperen, a synonym of Soldat Laboureur] ripens in October and November, and is a delicious and very sugary Pear. Pitmaston Duchess does very well on the wall; the fruit is large, handsome, and of the finest flavour, ripening in November. Forelle, or Trout, is not only a very pretty fruit from its crimson-spotted skin, but it is a Pear of delicious flavour. Bezi Mai is a fine-looking Pear, very late in the season, but it never ripens, and must be classed with stewing Pears. Winter Passe Colmar is also good here. This variety was exhibited in January by Mr. Barron from the

Chiswick Gardens in excellent condition, and the quality was first-class. *Bourré Hardy* here, as in the south, is considered a first-class Pear. *Winter Nellis* is one of the most constant varieties, and always to be depended upon at Christmas. Knight's *Monarch* I have tried in pots in the orchard house and also trained to the wall, but under no circumstances has the fruit been good; indeed it has kept until April and remained hard. It does well here from trees trained as bushes in the open ground; it is also good as a wall fruit, but not so good as that obtained from bushes. The wall space that had been occupied with Peaches and Nectarines has been now planted with Apricots and Pears, which are considered a much more profitable crop.

The Apricots seemed to have set well, and notwithstanding the severe weather no protection had been afforded the trees, Mr. Clark believes that it is much better not to protect the blossoms at all. On this there is much difference of opinion amongst gardeners. Some believe in covering up closely at night, and when the weather is cold all day as well; but it is certain that this close shading of the trees for so long a period is injurious to the blossoms and prevents them from being fertilised. I have an instance this year of Apricot blossom setting when the tree was uncovered, and failing to do so when the tree was covered with a cloth at night and sheltered with a wall coping as well. The tree I allude to was fully exposed when in blossom to 10° of frost, and it was against a south wall, where it had but little shelter from the east wind. The other was against a wall facing west, a better position, as it was well sheltered from the east and it did not catch the morning sun. I rather agree with Mr. Clark, and think that if shading is used it ought only to be let down in frosty nights and removed again in the morning. Apricots are more likely to suffer from overshading than any other fruit.

Fastolf is considered the best Raspberry; and the favourite Strawberries are *Keena's Seedling*, *Garibaldi*, *No Plus Ultra*, and *Dr. Hogg*. I noticed a very fine quarter of Broccoli; it had withstood the winter remarkably well under the shelter of a north wall, and had been planted here in preference to the open garden where this crop does not succeed so well. The kitchen garden is well cropped, and in a shady corner there is an excellent Mushroom house; the beds were in good bearing, and as the room is very large and well fitted with shelves no doubt a good succession is obtained from it.—J. DOUGLAS.

ROMFORD FLORAL AND HORTICULTURAL SOCIETY.

By the kind permission of David Macintosh, Esq., of Havering Park, the Show this year was held in his grounds; they are very extensive, and beautifully situated about three miles from Romford. The view from the front of the mansion extends to the *Cryste* 1 and *Alexandra Palaces*, and the course of the Thames may be traced from the *Victoria Dock* for many miles. A visit to this fine place will dispel the idea, not an uncommon one, that the southern part of Essex is composed principally of marsh land. The grounds are kept in excellent order, greatly to the credit of Mr. W. Bones, the head gardener. People for many miles round visited the Show, and with many of the working classes it was a regular holiday. In the agricultural districts there are very few days set apart for amusement, and when a holiday is given it could not be on a better occasion than a flower show. The old-fashioned pleasure fairs are fast becoming things of the past, and it is well that it is so, as they were only an excuse for drunkenness and riotous living, the more peaceably disposed dreading their annual recurrence; very many, on the other hand, are not disposed to see them done away with without protesting strongly. It would be well to introduce a flower show into such neighbourhoods, and especially one admitting cottage-garden productions; the higher class of attractions of the one would, if managed so that all classes would have an interest in it, soon overbalance the low vulgarity of the other.

At Romford cottage-garden productions are included in the schedule, and Cabbages, Peas, Carrots, Broad Beans, Potatoes, and all useful vegetables were exhibited. There were no entries in the class for honey; but the prizes for bouquets were well contested, as was also that for the best cultivated garden. To this prize Mr. Macintosh gave £5.

In the gardeners' classes the competition was very strong, but the growers in the neighbourhood had to give way to Mr. John Ward of Leyton, who exhibited in his usual fine style. Mr. Lane, gardener to Major General Fyfe, Pyrgo Park, Romford, was second for stove and greenhouse flowering plants. He had a few very well flowered specimens, *Phenocoma prolifera* and *Epacris miniata splendens* being in excellent condition. Mr.

W. Bones, Havering Park, was placed third; and in this we did not quite agree with the Judges, as, although the difference was but slight, the balance certainly was in favour of Mr. Bones. If equal second prizes had been given no fault could have been found, as Mr. Lane's plants were rather better trained. Foliage plants were well shown. Mr. Ward had a beautiful *Coccos Weddelliana*; and Mr. Douglas, gardener to F. Whitbourn, Esq., of Loxford Hall, a well-coloured *Croton Weismannii*, certainly the best of the yellow-leaved species. In Mr. Lane's collection was a good *Croton Veitchii*, a species with large well-coloured leaves. There were some good Ferns from Messrs. Ward and Douglas, and the third prize fell to Mr. Woodhams, gardener to G. P. Matthews, Esq. In his collection was a very fine *Adiantum onneatum*. Orchids were fairly represented from Messrs. Ward, Douglas, and Bones; and the stage Pelargoniums from Mr. Ward were well grown; Mr. Bones was second, and Mr. Woodhams third. His plants were well grown, but they were of such an ancient date that they had no chance with newer sorts. *Gloxinias* and *Achimenes* were well represented; but these flowers suffer much in transit, and generally look untidy by the time the visitors go round. Mr. W. Meadmore, nurseryman, Romford, had an excellent collection of bronze and gold *Pelargoniums*; and the prizes for table decorations went to Mr. Sedden.

There was not much fruit, but the quality was very good. The first-prize collection contained very good black and white Grapes, excellent Peaches and Strawberries; it was put up by Mr. Lane. The best Muscat Grapes were shown by Mr. Douglas, and the best Black Hamburg Grapes by Mr. Bones. Mr. Lane had the only dish of Peaches, but it was well worth the first prize. Mr. Douglas gained the first prize with excellent Strawberries. There were six entries for a collection of eight sorts of vegetables, Mr. Douglas coming in first with Dwarf Kidney Beans, Tomatoes, Peas, Cauliflowers, Carrots, Asparagus, Cucumbers, and Kidney Potatoes. The Show was a great success financially, over £100 being realised from subscribers' tickets, and upwards of £60 was taken at the gates.

ROYAL NATIONAL TULIP SOCIETY'S SHOW.

ALTHOUGH this Show was postponed from the original date of May 26th, the alteration was a sign of how hard the times had been for the Tulip. Its florist predecessor the *Auricula* had also passed through a most unkindly season, so that we had much anxiety overshadowing our pleasure in these earlier favourites.

Preserving the foliage of the Tulip in rich health is essential to a well-developed bloom, and has been a work requiring attention in the mischievous windy frosts of April. During almost the whole of May the wind was easterly, and for a week together the plants could scarcely move. There were none of those balmy nights in which the young blooms at the colouring period do so much of their work. Among our best Tulips there are strains so true to their established character that scarcely anything shakes their constancy. These suffered chiefly in size and minute finish this year through effects of frost.

Many collections were not at their best by the show day—Mr. Barlow's and my own, for instance, being seven or eight days late, so that we could only begin showing in the "threes." Many were obliged to have recourse to cutting the flowers and trying to cook them out in bottles of tepid water in a cool greenhouse, a process so different from that of natural expansion that some one termed it the slaughter-house treatment. Tulip blooms will grow well in water if only they have first obtained a certain maturity. Their colouring must be first developed, for water colours, so to say, are poor, and the fur upon the pistils that open later than the anthers should be expanding.

If the Exhibition could have been held with the Great Show at the Botanic Gardens, June 2nd, the Tulips would have looked far better in the light, so far superior to the killing gloom in the Town Hall; and they would have added a distinctive feature to the Exhibition, and thus have helped to vary the impression that set flower shows have grown to be very much alike. Florists are blamed for not arranging their flowers with the best view to general effect. This is scarcely their province, and it should be remembered that florist flowers have the most delicate possible individuality of beauty. They are the most dainty touches of Nature's pencilling. Each is a study in itself, and so these are not the flowers to paint broad effect with, and background brilliances.—F. D. HOSSEN, *Kirkby Malsard, Bpton.*

PRIZE LIST.

Twelve Distiller Blooms, two in each of the classes.—1, W. Whitaker Feathered Rose, Mrs. Lea and Industry (fine); Flamed Rose, Mabel and Mrs. Lea (splendid style); Feathered Bizarres, Masterpiece and Demonstration; Flamed Bizarres, Dr. Hardy and Sir J. Paxton; Feathered Byblommes, Adonis (short feather, round top), and Violet Amabile (good); Flamed Byblommes, Tallman (sterling sort), and Sylvester (a seedling of handsome proportions). 2, T. Lea, Feathered Rose, Herosine and Seedling; Flamed Rose, Aglaia and Triumph Royal; Feathered Bizarres, Seedling and Gratitudine; Flamed Bizarres, Prince of Wales and Dr. Hardy; Feathered Byblommes, two Seedlings; Flamed Byblommes, Adonis and Duchess of Sutherland. 3, J. Hague, Feathered Rose, Mrs. Lea and Mabel; Flamed Rose, Aglaia and

Mabel; Feathered Bismarck, Masterpiece and George Hayward; Flamed Bismarck, Masterpiece and Paxton; Feathered Byblomen, Sarah and Violet Amiable; Flamed Byblomen, Tallman and Caruncle. 4, W. Wardle, Feathered Bismarck, Heroine and Mrs. Lomax; Flamed Bismarck, Triumph Royal and Aglaia; Feathered Bismarck, Garibaldi and Paxton; Flamed Bismarck, Dr. Hardy and Paxton; Feathered Byblomen, Adonis and Violet Amiable; Flamed Byblomen, Adonis and Duchess of Sutherland. 5, D. Woolley, Feathered Bismarck, Mabel and Heroine; Flamed Bismarck, Aglaia and Triumph Royal; Feathered Bismarck, Catalpa and Paxton; Flamed Bismarck, Paxton and Dr. Hardy; Feathered Byblomen, Queen of the North and Beale. Flamed Byblomen, Princess Royal and Beale.

Six Distinct Blooms, one in each class.—1, C. Forman with Feathered Rose, Heroine; Flamed Rose, Royal; Feathered Bismarck, Demosthenes; Flamed Bismarck, Dr. Hardy; Feathered Byblomen, Mary Forman; Flamed Byblomen, Duchess of Sutherland. 2, T. Haynes, Feathered Rose, Heroine; Flamed Rose, Aglaia; Feathered Bismarck, Masterpiece; Flamed Bismarck, Paxton; Feathered Byblomen, Adonis; Flamed Byblomen, Duchess of Sutherland. 3, J. Turner, Feathered Rose, Rachel; Flamed Rose, Mrs. Lee; Feathered Bismarck, Apelles; Flamed Bismarck, Paxton; Feathered Byblomen, Adonis; Flamed Byblomen, Duchess of Sutherland. 4, W. Whitaker, Feathered Rose, Mrs. Hindley; Flamed Rose, Mr. Heady; Feathered Bismarck, John Ratcliffe; Flamed Bismarck, Dr. Hardy; Feathered Byblomen, Violet Amiable; Flamed Byblomen, Tallman. 5, C. Barnes, Feathered Rose, Industry; Flamed Rose, Mabel; Feathered Bismarck, Paxton; Flamed Bismarck, Ajax; Feathered Byblomen, Violet Amiable; Flamed Byblomen, Duchess of Sutherland. 6, — Morris, Feathered Rose, Heroine; Flamed Rose, Aglaia; Feathered Bismarck, Paxton; Flamed Bismarck, Paxton; Feathered Byblomen, Violet Amiable; Flamed Byblomen, Norval. 7, — Mellor, Feathered Rose, St. Armand; Flamed Rose, Lady C. Gordon; Feathered Bismarck, Paxton; Flamed Bismarck, Paxton; Feathered Byblomen, Beale; Flamed Byblomen, Duchess of Sutherland. 8, H. Williamson, Feathered Rose, Industry; Flamed Rose, Magenta; Feathered Bismarck, Seedling; Flamed Bismarck, Paxton; Feathered Byblomen, Sarah; Flamed Byblomen, Duchess of Sutherland.

Class of Six Distinct for Half-guinea Subscribers only.—1, — Honsley, Feathered Rose, Mrs. Lee; Flamed Rose, Aglaia; Feathered Bismarck, Masterpiece; Flamed Bismarck, Paxton; Feathered Byblomen, Violet Amiable; Flamed Byblomen, Violet Amiable. 2, R. Yates, Feathered Rose, Lady Lilford; Flamed Rose, Aglaia; Feathered Bismarck, Sovereign; Flamed Bismarck, Paxton; Feathered Byblomen, Mrs. Pickell; Flamed Byblomen, Tallman. 3, F. Richardson, Feathered Rose, Heroine; Flamed Rose, Royal; Feathered Bismarck, Apelles; Flamed Bismarck, Dr. Hardy; Feathered Byblomen, Adonis; Flamed Byblomen, Beale. 4, E. Booth, Feathered Rose, Mrs. Lee; Flamed Rose, Aglaia; Feathered Bismarck, Sovereign; Flamed Bismarck, Paxton; Feathered Byblomen, Adonis; Flamed Byblomen, Adonis.

Three Feathered, one in each class.—1, T. Haynes, Adonis, Heroine, and Paxton. 2, — Honsley, Mabel, Sovereign, and Adonis. 3, W. Whitaker, Seedling Rose, Demosthenes, and Violet Amiable. 4, C. Barnes, Sovereign, Violet Amiable, and Mrs. Lee. 5, T. Lea, Industry, Beale, and Seedling. 6, — Mellor, Paxton, Violet Amiable, and Heroine.

Three Flamed.—1, — T. Mellor, Masterpiece, Duchess of Sutherland, and Mabel. 2, — Haynes, Tallman, Paxton, and Aglaia. 3, C. Forman, Paxton, Sarah Heady, and Duchess of Sutherland. 4, Rev. F. D. Horner, La Van Dikar, Merit, and Duchess of Sutherland. 5, — Wardle, Paxton, Sarah Heady, and Adonis. 6, J. Hague, Van Dikar, Prince of Wales, and Adonis.

Pairs, open to all, one Flamed and one Feathered.—1, Rev. F. D. Horner, Adonis, flamed; Mrs. Lomax, feathered. 2, T. Haynes, Salvator Rose, flamed; Masterpiece, feathered. 3, C. Forman, Duchess of Sutherland, flamed; Heroine, feathered. 4, T. Mellor, Lord Denman, flamed; Masterpiece, feathered. 5, — Honsley, Paxton, flamed; Mrs. Lee, feathered. 6, — Wardle, Dr. Hardy, flamed; Heroine, feathered.

Pairs, for Maiden Growers (who have never won their Sub. at one Show).—1, — Fogg, two seedling Bismarck. 2, — Detchon, Captivator and Magenta, feathered.

Single Blooms.—Feathered Rose.—1, 8, and 9, Rev. F. D. Horner, Count de Yargenne. 2, Gelbert, Heroine. 4, Wardle, Orea. 6 and 9, W. Whitaker, seedling and unknown. 7, T. Mellor, Chervin. 8, — Williamson, Aglaia. 10, — Haynes, unknown. Feathered Bismarck.—1, — Haynes, Masterpiece. 2, — Williamson, John Sharp. 3, — Mellor, Honor's Seedling. 4 and 10, — Lea, James Lee and Seedling. 5 and 7, C. Forman, George Hayward and Lord Byron. 6, — Moore, Paxton. 8, — Richardson, Demosthenes. 9, — Williamson, J. Sanderson. Feathered Byblomen.—1 and 5, — Haynes, Mrs. Pickell and Selma May. 2, W. Whitaker, Adonis. 3, — Turner, Violet Amiable. 4 and 6, — Richardson, Cupid and Queen of Denmark. 7, — Cooper, Sarah. 8, — Williamson, Mrs. Stowe. 9, D. Woolley, Beale. 10, — Mellor, Angelina. Flamed Rose.—1 and 8, D. Woolley, Lady Sefton and Arlette. 2, — Wardle, Lady C. Gordon. 3, — Barnes, La Van Dikar. 4, — Mellor, Mabel. 5, — Morris, Aglaia. 6, — Barber, Royal. 7, 9, and 10, W. Whitaker, Sarah Ann, Lady of the Lake, and N. Gibson. Flamed Bismarck.—1, J. Thurston, Paxton. 2, 8, 4, and 8, — Haynes, Ajax, Mrs. Lee, Dr. Hardy and Pilot. 5, — Wardle, Lord Baglan. 6, — Lea, Prince of Wales. 7, — Honsley, George Hayward, Flamed Byblomen.—1, — Wardle, Duchess of Sutherland. 2, — Cooper, Lizelle. 3, W. Whitaker, Britannia. 4, Rev. F. D. Horner, Tallman. 5, Williamson, 690. 6, 7, and 8, — Haynes, Martin's 101, and Duchess of Sutherland. 9, — Cooper, Director. 10, — Thurston, Constant.

Best Feathered Bloom in the whole Exhibition.—Haynes, with Masterpiece. *Best Flamed ditto*.—W. Whitaker, with Paxton.

NOTES ON VILLA AND SUBURBAN GARDENING.

ACHIMENES AND GESNERAS.—These are deservedly popular plants with the professional gardener, and should also be so with the villa gardener. The merits of the first-named consist in their being valuable decorative plants for a warm greenhouse if the tubers are started early, but they will do well in the ordinary greenhouse or amateur's conservatory if they can be grown in their earliest stages in a heated frame, say among Cucumbers or Melons. If from six to twenty tubers are placed in a pot or pan they make sufficiently good specimens for the decoration of any conservatory.

I will name a few of the varieties which are grown for ordinary decoration. These are Sir Treherne Thomas, a vigorous

grower, and flowers a rich crimson; Tubiflora, a purplish-red flower, very ornamental, and quite a favourite; Mauve Perfection, a large flower and of good substance; then comes Edmund Bessler, a well-known favourite kind; there is also A. Verschaffelti somewhat similar, but the flowers do not come large with me; Dr. Hopf, a good sort with white and red flowers; Aurora, scarlet, and yellow eye, and a good variety; Carl Wolfarth, a well-known sort and quite as effective as any other varieties named. There are, of course, numerous other sorts later introduced; among them is, I think, Rose Queen and Parsonii, Harry Williams and Lady Lytleton, which appear to be about the best, but I do not grow them.

The Achimenes does not require a great depth of soil, but abundance of drainage is necessary. The tubers having fine hair-like roots must be carefully treated as to watering. The soil I have used successfully has been two gallons of turfy loam, the turf pulled to pieces, one gallon of well-decayed but sifted leaf soil, and about two double-handfuls of thoroughly decayed cow manure in a dry state, so as to be able to pass it easily through a fine sieve: to this mixture a little powdered charcoal and silver sand is added, mixing the whole well together with the hand. The pots are well drained and filled with soil, which is made moderately firm, up to within an inch of the rim, the tubers being selected and laid carefully over the surface; these are then just covered with silver sand. Before covering them, if the soil is moderately moist, water will not be required for a day or two. When the plants are well up great care is necessary that some of their leaves do not get scalded by the moisture laying on them when the sun is shining on them strongly; if there is a chance of that the brightest rays must be kept from them, but remember they do not like too much shade.

As soon as the bloom buds appear it is time to stake-out the shoots, and I know of no plants that give a better return for the trouble of staking-out, for they can be trained to any shape desired, and after staking the plants seem to grow much faster and the foliage improves very perceptibly.

As basket plants Achimenes are amongst the very best, for they may be so trained for hanging as to hide the pots or baskets they are growing in, forming perfect globes of flowers.

Gesneras are stove plants, requiring rather more heat than the Achimenes, but their foliage is perfect and handsome. They require much the same treatment as to soil and drainage. I have tried for two or three years in succession to note the difference in the plants where good peat has been added instead of leaf soil; but I think there is no advantage. Gesneras take several months to come to perfection, but they are grand when they are well grown. The best sorts are G. zebrina, G. cinnabarina, G. splendens, and reticulata. Great care is necessary to keep the foliage in good order, for this is one of their greatest ornaments. They are capital dinner-table plants, and the flowers are produced on spikes which gradually lengthen and for a long time produce a succession of bloom, which may be used for various purposes. They are the more valuable because they produce their flowers in autumn and winter when sufficient heat is afforded them.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

THE early vegetable crops are very backward this season, except where a little assistance has been given to them by a temporary shelter of glass or canvas covering. We have found the small glass coverings, invented by Mr. Rivers of Sawbridge-worth to protect Vines, very useful for starting small crops such as Lettuce and Carrots, or for bringing Cauliflowers on during the early months of the year; but any covering (of course glass is always to be preferred) that breaks the force of a keen frost-wind, or that can be placed on in cold nights, leaving the crops open by day, makes a week or two difference in earliness. Most gardeners know the value of such aids to early crops, and there are very few employers who do not value early Peas, Potatoes, Cauliflowers, Dwarf Kidney Beans, &c.; and yet they will in many cases begrudge the outlay of a few pounds to provide their gardener with the appliances that he desires. At the country shows up to the middle of June in Essex Peas and Cauliflowers were very poorly represented. We gathered Laxton's William I. on the 18th from the earliest border: they were just in, about three days earlier a dish could not have been picked. Early London Cauliflower was also in excellent order from plants put out in the autumn under hand-lights, and the coverings could not be removed until April.

The advantage of deep trenching and placing good manure at the bottom has been very apparent in the growth of the Peas this year, as the crops on ordinary worked ground are very poor indeed. April is usually showery, but our rainfall from the 1st of April to the middle of June has been but 2.80 inches. On the evening of June 15th 6.5 inches fell. Mildew and thrips are very destructive to the crops of Peas in dry seasons, but they are not so subject to these blights under deep cultivation.

We have gone over the Beans and topped them. Our own stock of Windsor is very much superior in appearance to that of the new Beville Longpod. It would be very useful if those who have grown that variety would relate their experience with it in a cold unfavourable season like the present, as it seems with us to be more susceptible to injury than any other variety.

The last crops of Peas may now be sown, and the best early Peas are also the best for late crops, being more hardy than the Marrows, which succumb more surely to mildew. Those who wish to save seeds of Cauliflowers should mark the best heads now, and allow the plants to remain on the ground, which is preferable to transplanting them. Broccoli, Brussels Sprouts, Leeks, Savoy, and Celery may be planted. Choose showery weather if possible: if this cannot be done it is best to plant at night, as the roots have a better chance to lay hold of the fresh ground if the weather is hot and dry. Working the hoe amongst all growing crops and earthing them up when required may be vigorously prosecuted all through this and the following months.

PINES.

If the vegetable crops are poor and late the Pines are emphatically so. At the London exhibitions we never saw such poor Pines, even the large prizes offered failing to bring out anything but third-rate fruit; at the country shows we have seen none. For one thing Pines are becoming as common as Cabbages, and it was only by the rarity of the fruit and the expense of culture that caused it to be valued so much as an aristocratic fruit. Now, when St. Michael's Pines can be had all through the winter and up to June, and West Indian fruit is carted through the streets in barrowloads by the costermongers in July, English-grown fruit cannot find a place. Still those who value a really good Pine must grow their own or purchase home-grown fruit, as British fruit is superior to that of foreign growth, just as British-grown Grapes are superior to any other Grapes in the world.

It is not necessary at this period of the year to use fire heat at all for this fruit; closing early with sun heat will retain the heat long enough to prevent the thermometer from falling too low. Damping the house night and morning will under the circumstances be sufficient. Suckers that have just been potted and that are intended to fruit next year must be pushed on and be repotted into their fruiting pots as soon as the plants are well established in the small pots. Once potting is quite sufficient. Let the bottom heat be 90° or 95°, and the night temperature 70° at the lowest point.

PEACH HOUSES.

Where the fruit is ripening some netting may be fixed underneath the trees, into which the fruit can fall and be safe from bruises. When the weather is dull and cold the flavour would be improved by the heating apparatus being used when the ventilators are open, but they ought not to be closed either by night or day unless it be to keep out the rain. There is but little attention required except to gather the fruit, and this is preferable to letting it drop from the trees. It ought to be gathered very carefully. It will not do to press it with the fingers to ascertain if it is ripe. A very little experience in this is worth a page of instructions. The fruit will be at the stoning period in late houses at present, and must not be forced too much until stoning is completed. When the second swelling takes place will be the time to syringe freely and keep up plenty of heat and moisture if the fruit is wanted early.

GREENHOUSE AND CONSERVATORY.

We generally fall short of flowers at this period, but it is also the time when flowers are not so much valued indoors as they are at other seasons; and where there is not sufficient glass supplementary to the greenhouse to grow plants to keep the house gay all the season, it is better to be short when flowers are of least value, or when they are least wanted. Camellias are now being grown on in heat, and they are well syringed and watered until the buds set, when the heat is reduced and the plants are either transferred to the greenhouse or placed in a shady position out of doors.

Those who grow a good collection of Cape Heaths and New Holland plants will be able to make a good display at this season, as many of the most choice species and varieties will now be in flower. The difficulty in many places with these plants is to find a place for them when they are not in flower. They are all most valuable for decorative purposes. At this season, when Balsams, Fuchsias, stage Pelargoniums, and other softwooded plants are growing freely, the more tender and slower-growing Cape plants are apt to become overcrowded, and they not only suffer from want of air and light, but the insidious pest, mildew, also attacks the young growths, doing them serious injury. Others are more liable to be attacked by red spider—of these may be named *Pimelea spectabilis*, which often loses its leaves without any apparent cause, but if the under sides of the leaves be examined they will be found covered with red spider. If the leaves attacked by mildew are dusted on the first appearance of the parasite with dry flowers of sulphur this will kill it. Red spider is best destroyed by syringing the plants well daily with clear rain water. All hardwooded plants that

have done flowering should be picked over, removing the seed-pods and withered flowers. Plants that have been covered with flowers to the extent of hiding the foliage are exhausted quite enough without having to support decaying flowers or seed-pods. Indeed, those who grow for exhibition are so well aware of this, that in the case of some plants they allow the specimens an entire season to make their growth, and get a full display of flowers the following season.

Small pots of *Rhodanthe maculata*, and the *Globe Amaranthus*, to which many other half-hardy and tender annuals may be added if grown in 8-inch pots, are very useful for the front row. The *Liliums* are now coming in, and will keep the house gay from now until the end of September. The pretty little *L. tenuifolium* is now over, and *L. Thunbergianum* in many distinct varieties succeed it. These will be followed by *L. auratum*, *L. Humboldtii*, and others of the North American species.

FLOWER GARDEN.

We have been keeping the hoe at work amongst the bedding plants. Many small weeds were appearing, but the hoe does good in other ways, and by the time the plants are growing freely the ground will be in good order and free from weeds. All the plants are looking healthy, and those that require pegging down will be done at once, as the plants generally grow better after pegging the growths down close to the ground.

Roses are making very good growth in sheltered places, and where a bed of them was well protected from the east and north winds the growths are as clear and healthy as we have ever seen them, but both green fly and the bud worm are unusually active. There is no better way of destroying the maggot than by picking it out of the bud with a pin. The aphid may be destroyed by dipping the shoots in soapy water.

Herbaceous plants have been trained to sticks where they are required, and all the tall-growing species require sticks, such as *Phloxes*, *Pentstemons*, *Campanulas*, *Aquilegias*, &c. If they are not tied-up when the growths have started about 6 inches, a gale of wind snaps many of them off close to the surface of the ground. The flower spikes ought not to be crowded too closely together, as one good spike is worth six weakly drawn-up things.

Pinks are now coming into flower, and they are very much better than they were last year. A cool season seems to suit this favourite old flower. The pods require to be tied to prevent them from splitting. Carnations and Picotees will be late in flowering this year; but they are also strong and healthy. Our worst enemy is wireworm; even although the soil was picked over three times a few small specimens were overlooked, and just as many worms as are left in the soil so many plants are destroyed before the enemy is captured. We destroy green fly by dusting with snuff.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

- EXETER (Roses). June 22nd. Mr. T. W. Gray, Hon. Sec.
 CHELSEA (Roses). June 24th. Mr. C. H. Pile, Summerfield, Bickley, Hon. Sec.
 BRISTOL (Roses). June 24th. Mr. J. Payne, Treasurer.
 BURYTON-UPON-TRENT. June 25th. Mr. F. S. Dunwell, Sec.
 MILDENHURST (Roses). June 25th. Mr. Hubert Bensted, Bockstov, Mildstone, Sec.
 COLCHESTER. June 25th and 26th. Mr. W. Harrison, Sec.
 LEEDS. June 25th, 26th, and 27th. Mr. James Birkbeck, Delph Lane, Woodhouse, Leeds, Sec.
 RICHMOND. June 25th. Mr. A. Chancelor, Hon. Sec.
 WIMBORNE (Roses). June 25th. Mr. C. Parker, Hon. Sec.
 TORBAY. June 25th and 26th. Mr. W. Fane Tucker, Capt., Braddon Tor, Hon. Sec.
 OXFORD (Roses). June 30th. Mr. C. R. Ridley, 115, Aldgate, Hon. Sec.
 OXFORD PALACE (Roses). June 30th and July 1st.
 BROOKHAM (Roses). July 1st. Rev. A. Cheales and Mr. C. Mortimer, Secs.
 MARSFIELD. July 1st. Mr. J. H. Edmondson, Hon. Sec.
 SOUTHPORT. July 5th. Mr. A. Campbell, Sec.
 ROYAL CALDERHEAD HORTICULTURAL SOCIETY. July 5th and September 18th.
 GUILDFORD. July 5th. Mr. Alfred King, Sec.
 WESTMINSTER AQUARIUM. July 5th and 6th.
 IPSWICH. July 6th, and September 17th. Sec., Mr. W. B. Jeffries, Hamley Road, Ipswich.
 FROME (Roses). July 6th. Mr. A. B. Baily, Hon. Sec.
 NEWARK PALACE (Roses). July 6th. Mr. F. R. Doherty, Sec.
 NOTTINGHAM. July 6th to 10th. Mr. A. Kirk, Municipal Offices, Sec.
 SANDOWN PARK. July 7th and 8th. Mr. Wills, Royal Exotic Nursery, Osnow, Crescent, South Kensington, Sec.
 ALEXANDRA PALACE. Roses. July 7th and 8th.
 WELLINGBOROUGH. July 7th and 8th. Mr. W. B. Parks, Hon. Sec.
 EALING, ACTON, AND HANWELL. July 11th (at Fordhook). Mr. B. Dean, Ealing, Sec.
 ENFIELD. July 12th. Mr. J. T. Rofs, Bloomfield Nursery, Sec.
 HILVERSBURG (Roses). July 12th and 13th. Mr. J. Mitchell, Sec.
 WIMBORNE. July 12th and 13th. Mr. P. Appleby, 5, Linden Cottage, Hon. Sec.
 HIGHGATE. July 18th. Mr. W. M. Bidd, 6, North Road, Highgate, Sec.
 WEST OF ENGLAND (HERRFORD). Roses. July 18th. Rev. C. H. Bulmer, Gredenhill, Sec.
 GLITTON, BRISTOL (Roses and Strawberries). July 18th. Mr. J. T. Jackson, Sec.

LEEK (Roses). July 18th. Mr. S. Cartwright, Sheep Market, Leek, Staffordshire, Hon. Sec.

KILMARNOCK. Roses, July 18th and 19th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.

TONBRIDGE. July 19th. Mr. W. Blair, Hon. Sec.

ROYAL HORTICULTURAL SOCIETY, SOUTH KENSINGTON. July 19th and 20th (Roses, &c.). November 8th (Fruit).

TEWKESBURY. July 25th. Mr. P. Moore and Mr. H. J. Cochrane, Hon. Secs.

WRETHAM. July 25th. Mr. J. B. Shisley, Hon. Sec.

HUNTINGDON. July 28th. Mr. J. Diller, Market Place, Sec.

HEADINGLEY. July 28th and 27th. Mr. T. Atkinson, Burleywood, Headingley, Leeds, Sec.

ABERDEEN (Royal Horticultural Society). July 28th, 27th, and 28th. Mr. Archibald J. Binnie, 128, Union Street.

BRIGHTON. July 29th. Messrs. C. Jessop & E. Rawnsley, Hon. Secs.

SALTAYRE. July 29th. Mr. G. A. White, Hon. Sec.

KILSEY (Flowers). August 1st. Mr. C. E. Bracebridge, Sec.

HEWORTH (Horticultural). August 2nd. Mr. R. H. Felton, Hon. Sec.

RAWTENSTALL (ROSEDALE). August 4th and 5th. Mr. M. J. Lonsdale, Sec.

SOUTHAMPTON. August 6th and 7th. Mr. C. S. Fridge, 89, York Street, Sec.

TAUNTON DRANE. August 10th. Mr. F. H. Woodforde, M.D., and Mr. Clement Smith, Hon. Secs.

FILBY. August 11th. Mr. Walter Fisher, Hon. Sec.

OTLEY. August 19th. Mr. Alfred Suttle, Hon. Sec.

CLAY CROSS. August 15th. Mr. J. Stallard, Clay Cross, near Chesterfield, Sec.

WESTON-SUPER-MARE. August 15th and 16th. Mr. W. B. Frampton, Sec.

PRESTON. August 16th and 17th. Mr. W. Troughton, Hon. Sec.

SHREWSBURY. August 16th and 17th. Admitt. & Naunton, Hon. Secs.

MILFIELD HORTICULTURAL. August 19th. Mr. George Senior and Mr. John Rushforth, Hon. Secs.

NEWBURY. August 22nd. Mr. H. Seymour, Hon. Sec.

CHEPSTOW. August 23rd. Mr. R. Thorn, Hon. Sec.

CARSHALTON, WALLINGTON, and BEDDINGTON. August 24th. Mr. J. B. Bines, Leicester House, Carshalton, and Mr. W. Clark, the Nurseries, Wallington, Hon. Secs.

SEATON BURN. August 26th. Mr. E. Richardson and Mr. W. Elliott, Secs.

ISLE OF THANET (MARSHES). August 30th. Mr. C. D. Smith, 8, Marine Terrace, Margate, Sec.

MONTROSE. September 1st and 2nd. Mr. Alex. Burnett, 2, High Street, Sec.

DUNDEE (International). September 7th, 8th, and 9th. Mr. W. R. McAlister, 25, Euclid Crescent, Sec.

GLASGOW. September 12th and 13th. Mr. F. Gilb. Doughall, 167, Canning Street, Sec.

NORTHAMPTON (Chrysanthemums). November 14th and 15th. Mr. W. Gutteridge, 51, Denmark Road, Northampton, Sec.

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (P. P.).—"The Greenhouse: Its Plants and their Management" will suit you. It is published at our office, and may be had post free for ten stamps. (*Hortus*).—"The Cottage Gardeners' Dictionary," post free 7s. 6d., and "The Garden Manual," post free 1s. 8d. from this office, will afford you much information.

ADDRESSES (G. F. C.).—The address of the London Manure Company is 116, Fenchurch Street, E.C.

FUCHSIA MICROPHYLLA (Lady Emily).—*Fuchsia microphylla* and the Myrtle-leaved Orange ought to be procurable from the nurseries about London. The latter does not require a stove heat, and will thrive as well in a sitting-room as the common Orange.

WALL TREES UNHEALTHY (A. J. E.).—As your wall has a wide coping and the subsoil is dry, also the rainfall of the district low, it is highly probable that your trees are suffering by a deficiency of moisture. Examine the roots close to the wall, and if they are dry, as we suspect them to be, apply water liberally, repeating the application in a week and at intervals throughout the summer.

BLACK PANKIES (S. B. T.).—There are many others similar, some being equally dark in colour and having more perfectly formed flowers.

WALTONIAN CASES (S. JOYNSON).—We have not heard of Waltonian cases for some years, and do not know of anyone who makes them.

SYRINGING VINES (NOTES).—Many good growers do not syringe their Vines but afford them moisture by evaporation. The practice is good when carefully carried out. It is advisable to let the floors, &c., of the house become dry for half an hour or so each day, or you might err in producing an over-moist atmosphere favouring mildew. Leave a little air on at the top of the house all night, opening the ventilators about an inch, and increase it very early in the morning.

VINES RIPENING THEIR WOOD (J. B., Bristol).—We do not advise you to "cease syringing and damping the house now that the canes are showing signs of ripening," or before they are fully matured you may be infested with red spider, especially as you say that some traces of the pest are already apparent. At the same time we think that preferably to two slight syringings daily would be a weekly drenching of the Vines (which are not fruiting) to remove the red spider, keeping the house otherwise moderately moist by damping the paths, &c., but permitting these to become thoroughly dry once a day. Air must be admitted freely, not entirely closing the house at night. "Yellow foliage" is not always a sign of wood ripening, and in your case we

should endeavour to keep the foliage healthy as long as possible. Continue damping your house moderately for the next two months, applying and withholding water according to the brightness or dullness of the weather.

WHITE GRAPES FOR COOL VINEY (M. D.).—Buckland Sweetwater and Foster's White Seedling are two good white Grapes "succeeding with Black Hamburgh treatment." See what Mr. Douglas says in his notes on Studley Royal. You cannot follow the advice of a better cultivator than Mr. Douglas.

VINE LEAVES SCORCHED (S. M., Leeds).—The leaves sent demonstrate that you are keeping your house too close and moist, and we think also that the foliage is overcrowded. The lateral growth should not be closer than 15 inches from each other. Admitting air "before breakfast" is a very indefinite term. The house should not be entirely closed at night, and additional air should be given half an hour after the sun shines on the house in the morning—that is, assuming that the house receives the first rays of the morning's sun. If it is so situated as to be shaded from the sun until "after breakfast," you must not wait for it receiving the half hour's sun. Correct ventilation is one of the most important elements in successful Grape-growing.

SETTING MELONS (F. J.).—It is advisable to impregnate the flowers, because then you can insure the setting of fruit of an equal age and size, which is very important in securing a full and regular crop. You will not err in placing a vessel of water in your ground viney in "very hot and dry" weather until the Grapes begin to colour, but you must guard against producing a damp chilly atmosphere.

FUCHSIA FOR CONSERVATORY (W. C. H.).—The best light-coloured *Fuchsia* for planting in the border and training up the pillar is *Laetia*. It is a free grower and bloomer, often continuing flowering until Christmas. It is also one of the best for the other purpose for which you require—namely, for "cutting from to furnish fringes round stands of cut flowers."

PEACH LEAVES BILSTERED (S.).—Read what Mr. Luckhurst says on this subject in our present number. The bilster will appear on a south-west or a south-east aspect, according as the currents of cold air are directed. The only prevention against blistering is protection when the temperature is low and the young foliage tender. You had better remove the worst of the leaves and cut back also the shoots on which all the leaves are blistered, and fresh growths may yet be produced which may ripen with a fine autumn. The shoots of the character of that enclosed are irretrievably ruined, for every leaf was a crumpled mass of decay and covered with fungus.

FERNS.—Will a correspondent who forwarded two large fronds of *Polypodium obliquum* oblige by sending other specimens, those sent having been accidentally destroyed?

GVERNOR WOOD CHERRY (West Kent).—This is a very excellent Cherry, ripening early in July. The fruit is large and oblong heart-shaped, the skin being pale yellow mottled with bright red. It is a free bearer and good grower, and a tree is "worthy of a position on a north-west wall." The fruit is richly flavoured, and is suitable for exhibition purposes.

WOOLSTON PIPPIN APPLE (T. York).—You have been rightly informed that this is a late-blooming Apple, and on that account frequently escapes injury by spring frosts. It is a very valuable late-keeping dessert kind, and you cannot do better than add it to your collection. It may be obtained through any respectable nurseryman under its proper name of Court-Pendula-Flak.

CALCEOLARIAS UNHEALTHY (G. S.).—The leaf and flowers demonstrate that your plants have not had sufficient support. They have been too dry and probably pot-bound. They cannot be cured, it being too late in the season for any improvement to be effected by remedial measures.

GUANO FOR VEGETABLE MARROWS AND CUCUMBERS (G. F. C.).—It would best be applied as liquid manure at the rate of 1 lb. of guano to twenty gallons of water, to be given twice a week in bright weather, and once a week in dull weather. At the strength above named it may be applied to every description of plant except hardwooded plants, as *Heaths*, *Asclepias*, &c., at every alternate watering, the pots being filled with roots and in a healthy state; whilst for vegetable crops you may sprinkle the guano over the surface of the ground between the rows in moist weather at the rate of 2 to 3 lbs. per rod (80½ square yards), or give a good watering once or twice a week at the rate of 2 ozs. to a gallon of water. All waterings are best given in the evening or during dull weather, and between the rows rather than close to the stems of the plants.

VINES PRODUCING TENDRILS (A Constant Reader).—When tendrils are produced instead of bunches it is a result of the imperfect ripening of the wood, due to the roots being in a cold and wet border, which induces sappy growth difficult of maturation. Examine the border, and if the roots are deep and the border a close wet mass, as we apprehend it to be, lift the Vines in March, or just before they break, and rectify any errors of drainage and improve the constituents of the border.

CUCUMBERS DAMPING (Idem).—The atmosphere is too close, moist, and cold. Afford freer ventilation and a higher temperature, especially from sun heat—i.e., closing early, but leaving on a "pinch" of air so as to prevent an accumulation of moisture upon the fruit. The bottom heat should be 75°.

CLIMBERS FOR TRELLIS (Newes).—As you live near a town in a smoky district, the most suitable plant is Ivy, the finest of all plants for covering walls, &c., in town gardens, and for screens when support is given, as a trellis or framework of iron. The common Ivy (*Hedera Helix*) and Irish Ivy (*H. hibernica*, syn. *canariensis*) are the most suitable. The only objection is the exposed situation and the want of shade. This you might obviate by intermixing with the Ivy Clematises and the freer-growing kinds of Roses. They would afford both shade and shelter for the Ivy, and give you colour in summer, and being leafless in winter the Ivy would then appear to advantage. The Ivy you may plant now, lifting with good roots and watering copiously, and if strong 3 feet apart; and in autumn or spring, or even now if the plants can be had in pots, plant a Rose or a Clematis between every other plant of Ivy. Ivy cuttings will strike now if they are inserted in sandy soil on a north border, keeping moist, and by autumn they will be well rooted, and may then or in spring be planted out where they are to remain. The growths as they advance will need to be trained to the trellis. Suitable Roses are Dundee Rambler, Bampton, Russelliana, Rubra, The Garland, and Alice Gray. Clematises are montana, viticella plena, Henry, Jackmanii, and rubra violacea. The plants you have are not likely to succeed.

INSECTS ON FRAMES (H. M.).—There are no insects whatever on the leaves you have sent us, but the wood is slightly infested with scale. You cannot destroy this until the trees are denuded of their foliage in winter, until which time they will not receive serious injury. They can then be painted with

lime and sulphur mixed with a strong solution of soft soap, adding to each half gallon of the mixture a wineglassful of spirits of turpentine.

NAMES OF FRUITES (J. Milford).—1, Burton's Free Bearer; 2, Isle of Wight Pippin.

NAMES OF PLANTS (O. Princeps).—We are unable to name plants from their leaves alone. Send again when your plant flowers. The shilling numbers of the "Wild Flowers of Great Britain" (coloured plates) are published monthly at this office. (*A. Boyle*).—Large blue is *Melium violaceum*; small blue *Veronica chamaedrys*. (*F. Perry*).—1, *Lupinus redivivus*; 2, *Sanicula europaea*. (*Scott*).—1, *Euphorbia cyparissias*; 2, *Euphorbia hula*; 3, *Viola palustris*; 4, *Pentstemon*. (*N. G.*).—1, *Oxalis filiformis*; 2, *Oxalis ampullacea*; 3, *Oxalis panicula*; 4, *Oxalis vulgaris*. (*M. O.*).—We cannot undertake to name what are called "fiorile" flowers." (*J. G. F.*).—3, *Oxalis platycentra*; 4, *Scorpius japonicus aureo-variegatus*; 5, *Aloe variegata*. (*X. Y. Z.*).—1, *Trifolium minus*. (*J. Alexander*).—1, *Fraxinus appendiculata*; 2, *Chrysanthemum monspeliense*; 3, *Funkia undulata*; 4, *Bambusa Fortunei*; 5, *Aloe variegata*; 6, *Mossambrianthemum tenuifolium*. (*A. Wildsmith*).—*Polygonum bistorta*. (*D. W., Co. Down*).—*Veronica decussata*.

POULTRY, BEE, AND PIGEON CHRONICLE.

THORNE SHOW OF POULTRY, &c.

THE twenty-fourth annual Show was held at Thorne on the 14th inst., the grounds being most suitable for such a purpose, and all arrangements very good and well carried out, except that a few of the pens in the Selling class of poultry were too small.

In poultry the classification was much better than in some previous years, and the consequence was good entries. *Dorkings* came first. In cocks a Dark Grey was first and Silver second, the latter a large good bird but a little out of condition, and we noticed pen 6 as a grand White. Hens were both Dark. *Spaniards* were a grand lot and the winners well placed. First a very large old bird, a wonder for his age, and the cup for the large varieties was awarded here. The second was very fine in quality but had not the substance of the first. *Cochins* were a fair lot, the Whites in our opinion taking the lead in point of quality and condition, though the cup was awarded to a Buff hen. *Brahmas* good, especially the winners, the Dark cock in first position being a fine square bird; the hens in first and second positions were well pencilled and in nice order. *Game* were a very good lot, the colours being well divided. Black Red cocks were well placed, although the first is not one of the best coloured birds. In hens the first was not our choice, being short in limb and poor in style. Brown Red cocks were well placed, the first a superior bird; second very little behind. Pen 7, highly commended, also very good. Ducking cocks were well shown, the winners in very good order, the same remark applying to hens. In the following classes the winners were all Piles of as good quality as any in the Show, and mostly yellow-legged. The cup was awarded to a Brown Red hen, but we preferred the Brown Red or Duckwing cock or hen for that position. *Hamburgs* were very good throughout and well placed; the Black cock placed first was an extraordinary bird in all respects. *Game Bantams* were good entries, the cup going to a most perfect Black Red cock, a little large perhaps, but in all respects a Game cock. The rest of the class of moderate quality, an old acquaintance having indulged in a bath in a swill-tub, from the effects of which it had scarcely recovered. Black Red hens were a fair lot and mostly noticed. In the next two classes the birds were mostly Piles, the hens being particularly good. In the Variety class Blacks won, these being in very fine order, but the second were not good in comb.

Pigeons were noticed with very few exceptions. In Carrier cocks, the first was a Dun with good eye and beak-wattle; second a fair Black. Hens were both Duns and capital birds, the second exceedingly strong in head and beak for a hen. Pouter cocks, first a Black very superior, and second a White of fair quality. Hens, first a Blue rather pale in colour and gay, but in fine play, and a fine bird as to limb and style. Second a White, which we, however, could not make out as fine in girth, but with enormous crop. Short-faced Tumblers, both Almonds, very good in head points and well placed. Longfaces, first a genuine Black Bald, and second Red Mottle. Barbs not in good order, but the winners very good otherwise. Dragons were all Blues, and those of the light stamp were awarded the prizes. Antwerps, first Silver Dun, second Blue, very highly commended a Longtailed Blue of grand properties. In the Variety class first was a grand White Owl, and second a Blue English.

Rabbits with nine classes had eighty-six entries. The Lops had two classes; and in bucks a Fawn of bad colour and in wretched hair and condition won first—in fact condition seems to be a thing altogether ignored by the Club Judges, if we are to take the awards at this Show as a guide. Second a Fawn-and-white in fine order, taken all in all by far the best of the two. Very highly commended a Blue-and-white, a good one all over. Does, first a Black, by far the best in the Show, and second a Fawn. Angoras very good: the first a grand Rabbit though not large, second also good, and very highly commended very young, but promising and well shown. In Himalayans the first was good except ears, which were faded; the second, better

in that point, had a decided grey ring round the neck, a most objectionable point. Dutch a poor lot. In the Variety class Belgian Hare first. Second a young Silver Cream, yet too young for the show pen. In the Selling class Lopseeded well placed, but the awards in the Variety were such as only a dumb judge dare venture upon. First was a small Silver-Grey, dark in points and not in full bloom; and second the veriest wretch of a Himalayan doe, which looked too ill to crawl and was bad in every point. Third was a capital Angora, which was fairly entitled to second, and the first ought to have been given to pen 2, a Silver-Grey, which was very highly commended.

POULTRY.—*Dorkings*.—Cock.—1, W. Roe. 2, J. Chester. Hen.—1, W. H. Crabtree. 2, J. Chester. Cuck. W. Roe. *Spaniards*.—Cock.—1 and Cup, J. Boulton. 2, J. Thresh. Hen.—1, B. Beldin. 2, J. Powell. Hen.—1 and 2, J. Boulton. *Cochins*.—*Cinnamon* or *Buff*.—Cock.—1, H. Tomlinson. 2, J. Walker. Hen.—1 and Cup, W. H. Crabtree. 2, H. Tomlinson. 3, J. Walker. *Any other variety*.—Cock.—1, A. Bamford. 2, J. Walker. Hen.—1, W. Whitworth, jun. 2, H. Tomlinson. *Brahmas*.—Cock.—1, W. Schofield. 2, T. F. Ansell. Hen.—1, W. Whitworth, jun. 2, T. F. Ansell. *Game*.—*Black Red*.—Cock.—1, R. Hammingway. 2, Sales & Bentley. Hen.—1, C. W. Brierley. 2, Sales & Bentley. *Brown Red*.—Cock.—1, W. & H. Adams. 2, H. E. Martin. Hen.—1 and Cup, W. G. Waters. 2, Sales & Bentley. *Duckwing* or *other Grey* or *Blue*.—Cock.—1, G. C. & W. J. Mason. 2, H. E. Martin. Hen.—1, Sales & Bentley. 2, H. E. Martin. *White*.—*Pile*, or *any other variety*.—Cock.—1, H. C. & W. J. Mason. 2, R. Walker. Hen.—1, H. C. & W. J. Mason. 2, Sales & Bentley. *Hamburgs*.—*Golden-pencilled*.—1, Holmes & Deane. 2, H. Beldin. *Golden-pencilled*.—1 and 2, H. Beldin. *Silver-pencilled*.—1 and 2, H. Beldin. *Black*.—1 and 2, H. Beldin. *French*.—Cock.—1, W. H. Crabtree. 2, W. Culluck, jun. Hen.—1, W. H. Crabtree. 2, W. Culluck, jun. *Malay*.—1, H. Haywood. *Any other distinct variety*.—Cock.—1, H. Beldin. 2, A. W. H. Silvester. Hen.—1, W. Harvey. 2, H. Beldin. *Silver*.—Cock.—1, H. Beldin. 2, W. Culluck, jun. Hen.—1, W. Culluck, jun. *Game*.—*Black Red*.—Cock.—1, R. Hammingway. 2, Sales & Bentley. *Brown Red*.—Cock.—1, R. Hammingway. 2, Sales & Bentley. *White*.—Cock.—1, R. Hammingway. 2, Sales & Bentley. *Any other variety*.—Cock.—1, R. Hammingway. 2, Sales & Bentley. *Game*.—*Black Red*.—Cock.—1, R. Hammingway. 2, Sales & Bentley. *Brown Red*.—Cock.—1, R. Hammingway. 2, Sales & Bentley. *White*.—Cock.—1, R. Hammingway. 2, Sales & Bentley. *Any other variety*.—Cock.—1, R. 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temptation to see it cannot be resisted. I always go prepared to see a good display, and Mr. J. Wilson, the painstaking Hon. Secretary, knows well how to cater, and so fix the right men at their right posts (so far as a deputy secretary and a practical adjunct are concerned) to attend to the respective duties and groom the birds properly whilst beneath the spacious tent. No exhibitor need fear sending his best specimens to York Show whether they be old or young birds. By-the-by, speaking of young birds, those at the Show were indeed a promising lot, some of them no doubt qualified to take foremost positions in their respective classes at future All-England exhibitions. I will not extol any exhibitor's birds in particular; it would be fulsome on my part so to do. The Canaries generally throughout the classes were good specimens of the various breeds; the Mules were really first-class, and the Goldfinches and Linnetts in several instances came to the post in fair trim. The aggregate number of birds comprised some three hundred and odd, concerning which a page of the Journal could be well occupied in describing the respective merits of the winning birds, and remarking upon those which did not win. In class 2 the finest-looking bird was disqualified through having a marked feather, otherwise it would have made a mark. The owner, it appeared, had had the bird in his possession several months, and was unaware of the blemish (which prohibited its being shown as a "clear" bird) until soliciting an interview with me to point out the cause of disqualification.—G. J. BARNESBY.

The following is the prize list:—

CAGE BIRDS.—BELGIAN.—*Clear or Ticked Yellow or Buff*.—1 and 2, W. Forth. 3, Miss Beck. *Nowich*.—*Clear Yellow*.—1, C. Burton. 2, G. Simpson. 3, W. Grantham. *Clear Buff*.—1, W. J. Dickinson. 2, W. Grantham. 3, Harland & Son. *Even-marked Yellow or Buff*.—1, C. Burton. 2, Calvert. 3, Brown & Gayton. *Picked or Uneven-marked Yellow or Buff*.—1, T. Humphrey, jun. 2 and 3, W. Grantham. *Crested Yellow or Buff with Green, Grey, or Crested Crest*.—1, J. Young. 2 and 3, Harland & Son. *Even-marked Yellow or Buff-crested*.—1, J. Young. 2, J. Smith. 3, G. Tapscott. *YORKSHIRE*.—*Clear Yellow*.—1, Holdsworth & Crawford. 2.—*Overend*. 3, J. Rowland. *Clear Buff*.—1, C. Burton. 2, W. Forth. 3, W. Addison. *Even-marked Yellow or Buff*.—1 and 2, J. Overend. 3, Miss H. Bolk. *Crest-crested Yellow or Buff*.—any breed.—1 and 2, Garbutt & Ware. 3, R. Atkinson. *CINNAMON*.—*Jonques*.—1, Brown & Gayton. 2, J. Adams. 3, W. Baumer. *Buff*.—1 and 2, J. Adams. 3, T. Humphrey, sen. *Ticked or Marked, Jonques or Buff*.—1, J. Adams. 2, H. Bolk. 3, J. Stevens. *LIZARD*.—*Golden-spangled*.—1, T. M. Reid. 2, C. Cleminson & Ellerton. 3, J. Stevens. *Silver-spangled*.—1, T. M. Reid. 2, C. Cleminson & Ellerton. 3, S. Bunting. *Extra Prize*, J. Stevens. *Gold or Silver-spangled, with Broken Cap or Pied Wings or Tail*.—1 and 2, S. Bunting. 3, C. Cleminson & Ellerton. *GOLDFINCH MULE*.—*Yellow or Buff*.—1 and 2, S. Bunting. 3, J. Stevens. *Dark*.—1 and 2, Brown & Gayton. 3, S. Bunting. *ANY OTHER VARIETY OF MULE*.—1 and 2, J. Stevens. 3, S. Bunting. *YOUNG NOWICH*.—*Yellow*.—1, Brown & Gayton. 2, J. Young. 3, Devaney. *Buff*.—1, J. Orley. 2, Miss Burton. 3, W. Horwell. *Even-marked Yellow or Buff*.—1, W. Grantham. 2, Brown & Gayton. 3, W. Porritt. *Nowich*.—*Dark Crested Yellow or Buff*.—1, J. Cleminson. 2, W. Horwell. 3, C. Greenwood. *Nest or Young NOWICH*.—*Yellow*.—1, J. Young. 2, T. Humphrey, sen. 3, C. Burton. *Buff*.—1, Burton. 2, J. Burton. 3, E. J. Smith. *Crested*.—1, G. Frank. 2, J. E. Borr. 3, R. J. Smith. *Nest or Young LIZARD*.—1, C. Cleminson & Ellerton. 2, W. Evans. 3, C. Greenwood. *CLAS OF SIX YOUNG CLAMBERS IN VARIETY*.—1, R. J. Smith. 2, Goodall & Howard. 3, Burton. *SELLING CLASS*.—1, W. Forth. 2, T. Irons. 3, Garbutt & Ware. *COLLECTION OF BRITISH AND FOREIGN BIRDS, OF BOTH NOT LESS THAN TWELVE*.—1, W. Dodsworth. 2, Calvert. *PAREOT*.—*Grey*.—1, Reed. 2, Squire. *Any other variety*.—1, S. Bunting. 2, Miss Inglis. 3, J. Muckle. *GOLDFINCH*.—*Mottled*.—1, W. Forth. 2, J. Cleminson. 3, A. Ross. *BULLFINCH*.—1 and 2, J. Rowland. 3, J. Davaney. *LINNET*.—*Mottled*.—1, S. Bunting. 2, R. Pearson. 3, Cariss. *ANY OTHER VARIETY OF BRITISH BIRD*.—1, J. Rowland. 2, J. Cleminson. 3, G. Simpson.

JUDGES.—Mr. G. J. Barnesby, Derby.

LOST SWARMS.

It has often been asked, What should be done with hives out of which the bees have died and which are still full of good comb? Excellent advice has been given to this effect, that such hives should be kept sweet and clean, put aside in a dry place, and utilised in due time by putting the earliest swarms into them. I have found, however, that unless such hives be all but hermetically sealed up it is next to impossible to keep them free from the wax moth, except in the one instance where they are put and kept as virtual supers over vigorous stock hives.

But there is a better plan than even this, which is simply to let the hives be on their usual stands with entrances open to the winds of heaven. Such hives are sure to be taken possession of by advanced guards of some strong hive in your own apiary or in some apiary in the neighbourhood, and these will clean out the combs and keep off the wax moth and other insects. It does not follow that a swarm from such hive will take possession; should it do so, and there be no doubt as to the quarter from whence the swarm came, if your neighbour traces his bees it would be right at once to give them up, or if you know they are his bees. But should a stray swarm come and take possession of your empty hive, whence you know not, no law forbids your welcoming the new arrivals and assuming proprietorship of them. There are always a number of lost swarms every year which escape the notice of their owners. These usually move off, if not hived in time, to some hollow trunk or house roof in the vicinity. Why should they not rather fall into the hands of some neighbouring bee-keeper who has had the ill luck to lose his bees during the previous winter? Besides, "what is sauce for the goose is sauce for the gander." You may welcome a stray swarm to-day and to-morrow lose one of your own, which chose to issue when you were away from home or particularly

engaged. Such happens to myself every year, and we have actually bought stocks of Italianised bees in the neighbourhood which must have escaped from my own apiary.

It has been said that such empty hives are a trap to catch your neighbour's bees, and on that account the practice is said to be dishonest. I maintain, on the contrary, that your neighbour will never thus lose his bees if he is a diligent bee-master. If he is careless and negligent why should not his swarms fill your hives in preference to going off to some hollow tree or church tower, where they will benefit nobody? for they will certainly do one or the other if not hived by their owners as soon as possible when they have settled after swarming. To settle first is their (I believe) invariable practice. If they are not hived then, but allowed to make off, let their owner follow them and claim his property if he can trace them to your hive; otherwise let him mourn his inadvertence and learn to be sharper on the look-out another time. Not only so, your empty hives will be occupied by your own bees as likely as by anyone else's, and become the natural homes of your own stray swarms.—B. & W.

LIGURIANS VERSUS BLACK BEES.

I HAVE read with the greatest interest the discussion which has been going on as to the merits of the Ligurian and common black bees, more especially having been doubtful hitherto which were the best as honey-producers, but I think the following facts deserve to be recorded in favour of the Ligurians. First let me assure Mr. Shearer that this evidence comes from a party who has no "Ligurians to sell," and therefore is in no way "interested" in the matter.

On March 10th I opened and examined two hives standing alongside of each other; one (No. 1) black bees, the other (No. 2) Ligurians. The black bees (No. 1) were strong, and had brood in two combs; No. 2 were weak, and had no brood. Both had a little honey sealed up; both were fed with syrup in bottles placed on top of the hives. March 24th both were again opened. No. 1 was doing splendidly, brood in five combs, and they seemed merry and thriving; No. 2 still weak, but with brood in two combs.

April 18th they were again examined. No. 1 had brood in seven combs, and to all appearance could not do better; No. 2 brood in three combs only, and somehow did not seem to be doing as well as I could wish. They were not examined again till May 28th, when No. 1 was found with brood in all the combs and preparing to swarm; they were given a super, which they took to next day. No. 2 was then opened. Imagine my astonishment to find the hive literally crammed with bees, brood in every comb, and far stronger than No. 1. They were given a super, and took to it at once, and are filling it much faster than No. 1. Artificial pollen in the shape of pea-meal was supplied in a skep full of shavings from the first and taken in freely by the bees, and experience has quite convinced me that in such springs as we have had of late years the artificial pollen has become an absolute necessity, and we all owe Mr. Abbott our warmest thanks for the simple mode he has taught us by which it may be given to the bees.

In conclusion let me add that when asked by artisans whether I advise them to try Ligurians I always say "no," while to the gentleman I always say "yes."—STAINES.

SYSTEMS OF MANAGEMENT.—No. 8.

THE system I am now about to notice has been well tested by hundreds of bee-keepers in various parts of this country, and which wherever fairly tested has inspired confidence and commanded respect. So far as I know, its harvests of honey have not been approached by any other system of management. Though I have practised this system for fifty years, and have tried to unfold it in a book which is now widely circulated, and in smaller treatises which have appeared in the agricultural and horticultural press of Great Britain and Ireland during the last thirty years, I wish the reader to know that I am not the originator of the system, and that the merits of this mode of managing bees—if it has merits—do not belong to me. I knew many apiarists who carried it fully out for thirty years before my day. "If I gather a bunch of flowers to give away they are not mine, only the string that holds them together."

The centre of gravity in this system of management is a warm, cozy, roomy house for bees in winter and summer; and it has often been found—and it may be laid down as an axiom—that a good winter house for bees is a good summer one for them. I use large, cheap, straw hives of simple construction, and with these I compass and include swarming, supering, nading, and eking, and various modifications of these.

It is natural for bees to swarm, and it is wise and profitable to let all good stocks swarm in favourable seasons; but I hold that straw hives and plain wooden boxes afford more facilities for thwarting swarming than costly complicated hives of any kind. If swarming be natural and profitable, why make so many attempts to prevent it? Well, sometimes supers of honeycomb

are wanted in early summer, and efforts are made to induce the bees to fill them instead of swarming. In late seasons it may be that some hives are not full enough to swarm in May and June; on such occasions and at such times supering or other mode of enlargement is resorted to in order to prevent swarming. Taking a range of years, I have found that the swarming system of management is better than the non-swarming one, for in seasons favourable for honey-gathering swarms rise to greater weight than stocks that do not swarm at all. Last year Mr. Fox had a super of comb weighing 86 lbs. from a hive that did not swarm at all. The hive was not a large one, and some of the Judges at the Crystal Palace Show disqualified the super, thinking the hive too small to fill it. Suppose the hive and super together weighed 135 lbs. In Aberdeenshire last year July swarms rose to greater weight than 125 lbs. In favourable seasons during the last fifty years I have invariably found swarms taking the place of honour.

By the swarming system we can have all our hives full of young sweet combs, and young queens amongst them. On the non-swarming principle queens die of old age, causing a great loss to the hives at the time of their death. At no season and in no hive can a queen die without great loss being sustained; and if a queen die when there are no eggs in the hive her loss is ruinous to the community. If one die when drones are not available her death is equally ruinous. Suppose an apiarian who keeps twelve stocks pays no attention to the age of his queens, he will lose by death three queens annually. I know a gentleman who lost three queens last autumn when the hives had no drones. This spring he found that their successors were drone-breeders and useless. One-fourth of his stock was thus lost.

Again, the swarming system gives the bee-master a choice of stocks. A hive filled with honey to repletion is not eligible for keeping as a stock hive; and hives managed on the supering or non-swarming principle are generally too full of honey for stocks. But when the bee-keeper has a mother hive and one or two swarms from it there is a wide scope for choice; and, moreover, the bees of the rejected hives or those marked for honey, if united to the one marked for stock, make it a hive of surpassing strength and worth. If the readers of this Journal will keep these things in mind, and endeavour to carry them into practice, their future career in bee-keeping will be highly satisfactory and successful. The autumnal unions of swarms are like key-stones in arches, which give strength and endurance to the whole system. We all like to have early swarms and large harvests of honey and honeycomb; and the system of management here indicated will bear comparison in results with any other that I am acquainted with. The next letter on this system will embrace the question of supering and nadiring, this referring only to the question of swarming.

The bee-keepers of Great Britain and Ireland should aim at having early swarms; but in some districts swarming should be prevented by the middle of June, in others not till the middle of July. Where bees are removed to the moors and can gather honey till the end of the first or second week of September, bees may be allowed to swarm till about the 12th of July. From large hives that swarm early I take second swarms, and find that in good seasons they rise in weight to 50 lbs., 60 lbs., or 70 lbs. each, and the mother hive, though it sustains a loss at the time, becomes a strong hive by the end of the season. If second swarms be not taken from early swarms, they become too heavy for keeping in honey years. If stocks are fairly heavy at the time of swarming I turn the bees out of them at the end of three weeks after the first swarms leave them, putting the bees into empty hives, and take the honey from the stock hives. In unfavourable springs I let all stand till the harvest. Having little time to visit the bees at the swarming season I manage them with as little loss of time as possible. As soon as they are ready for swarming they are swarmed artificially, and if the old stocks contain 20s. worth of honey each the bees are turned out of them into large empty hives and the honey is taken.—A. PETTIGREW.

OUR LETTER BOX.

AYLESBURY DUCKS.—We are informed that the article on Aylesbury Ducks which appeared at page 459 of our present volume, and which was acknowledged as having been taken from the *American Fancier's Journal*, originally appeared in *The Bazaar*. It is a pity that our American brethren of the press cannot afford to acknowledge when they are indebted to their contemporaries.

SINGLE-FRAME OBSERVATORY HIVE FOR EXHIBITION (F. C.).—Intelligible directions to make this hive for the purpose of exhibiting a comb of bees at a local show can scarcely be given without drawings, but it may be sufficient to say that it should consist of a stand heavy and broad enough so as to be firm, with two wooden upright end pieces, with glazed sash back and front screwed on to them. The frame filled with comb and bees should be dropped in from the top, suspended by the ends of the frame as it was in its original hive. When in position there should be a quarter of an inch space all round and over the comb and frame, the size of which will of course form the guide for the dimensions of the hive. A wooden top should be fitted, having a central hole for ventilation and feeding. The comb should contain a sufficient supply of honey, or syrup must be constantly supplied. After the bees and

queen have been removed from the parent hive it will be necessary in returning them to take precautions against their slaughter, for they will be received as strangers. The queen should be caged at least twenty-four hours, and the workers sprinkled well with scented syrup. The bees will probably have raised queen cells in the original hive; these must be destroyed. Instructions for these operations and drawings of observatory hives will be found in Hunter's "Manual of Bee-keeping." (L.S.M.)

BEES NOT SWARMING (W. Dodsley).—Your bees are not ready for swarming, and they will not swarm naturally for about three weeks after their hives are filled with combs. If you attempt to swarm them artificially before they are ready they will be much injured, probably ruined, for they could not yield swarms large enough to succeed in this unfavourable season, and the old hives would be greatly injured by the loss of even small swarms at the present time. Let them remain as they are till the end of June, or till the hives be filled with combs; and if then too late for swarming you could super or nadir your hives with a view to get some honey instead of an increase of stocks. The combs in your straw hive are now old enough. We should like to advise you to let the bees in it multiply as fast as possible till the end of July, when they could be all driven into an empty hive and fed for the winter. If they then have 15 lbs. of sugar in a fortnight they will build fresh combs and store up food enough for the winter. The honey in the old hive will, if July be favourable for outdoor work, be worth three times the cost of the sugar.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain.
1876.	Barometer at top of Mast and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Air at 5 feet.	Shade Temperature.		Radiation Temperature.			
June.		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
We. 14	Inches. 30.078	deg. 53.5	deg. 53.5	S.W.	deg. 58.5	deg. 58.5	deg. 45.3	deg. 112.8	deg. 47.1	—	
Th. 15	29.908	53.4	55.5	S.	58.3	58.0	45.0	115.1	45.4	0.448	
Fri. 16	29.789	54.1	56.6	W.	58.0	58.4	47.6	112.9	42.1	0.013	
Sat. 17	29.908	53.9	52.4	S.	56.7	59.8	47.1	96.0	41.1	—	
Sun. 18	30.083	51.9	54.3	S.W.	56.1	70.8	52.3	122.9	46.3	—	
Mo. 19	30.167	53.0	54.9	S.	58.1	77.0	48.3	108.2	42.5	—	
Tu. 20	30.071	53.5	54.4	E.	59.8	58.8	48.1	125.1	47.7	—	
Means	29.968	53.9	55.1		57.8	70.1	49.3	112.8	45.9	0.455	

REMARKS.

14th.—A bright pleasant day, with nice breeze to temper the heat.
15th.—Fine till noon, then cloudy; rainy evening and night.
16th.—Rain in the night and early morning; fine afternoon and evening, but very cold for the time of year.
17th.—Dull and rain-like all day, though scarce any fall; very windy at night.
18th.—A beautiful day throughout.
19th.—A splendid summer day and brilliant starlight night.
20th.—Another very fine day; temperature in shade reaching nearly to 82°, but a brisk breeze prevented it from being at all oppressive.

The mean temperature of the week only differs from that of last week by about 1°, Friday and Saturday having been very cold. The last three days have been very fine.—G. J. SIMONS.

COVENT GARDEN MARKET.—JUNE 21.

The last few warm days have brought a good quantity of outdoor fruit into the market, and consequently Strawberries have experienced a great fall in price. Foreign imports are consist of Strawberries, Cherries, Melons, and Apricots, all of which are arriving in large quantities. Trade good.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	6	0	0	Mulberries.....	lb.	0	9	0
Apricots.....	box	1	6	0	Nectarines.....	dozen	8	0	0
Cherries.....	box	1	6	0	Oranges.....	♣ 100	6	0	0
Cherries.....	box	1	6	0	Peaches.....	dozen	6	0	0
Currents.....	do.	0	0	0	Pears, kitchen.....	dozen	0	0	0
Black.....	do.	0	0	0	Peas.....	dozen	0	0	0
Figs.....	dozen	0	15	0	Fine Apples.....	lb.	1	0	0
Filberts.....	lb.	0	0	0	Plums.....	dozen	0	0	0
Gobs.....	lb.	0	1	0	Quinces.....	bushel	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, household.....	lb.	2	0	0	Strawberries.....	lb.	0	6	0
Lemons.....	♣ 100	6	0	0	Walnuts.....	bushel	4	0	0
Melons.....	each	2	6	0	Walnuts.....	♣ 100	1	6	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	4	0	0	Leeks.....	bunch	0	4	0
Asparagus.....	♣ 100	1	6	0	Mushrooms.....	pottle	1	0	0
French.....	bundle	1	6	0	Mustard & Cress.....	punnet	0	2	0
Beans, Kidney.....	♣ 100	1	0	0	Onions.....	bushel	2	0	0
Beet, Red.....	dozen	1	6	0	Pickling.....	quart	0	6	0
Broccoli.....	dozen	1	6	0	Parley.....	dozen	0	0	0
Cucumbers.....	dozen	0	0	0	Peas.....	dozen	0	0	0
Cabbage.....	dozen	1	0	0	Potatoes.....	quart	2	0	0
Carrots.....	bunch	0	4	0	Kidney.....	bushel	2	6	0
Capiciums.....	♣ 100	1	6	0	New.....	dozen	0	0	0
Cauliflower.....	dozen	1	0	0	Radishes.....	dozen	1	0	0
Celery.....	bundle	1	6	0	Rhubarb.....	bundle	0	0	0
Coleworts.....	dozen	1	6	0	Salsify.....	bundle	0	0	0
Cress.....	dozen	0	4	0	Scorzonera.....	bundle	1	0	0
Endive.....	dozen	1	0	0	Seakale.....	basket	0	0	0
Fennel.....	bunch	0	8	0	Shallots.....	lb.	0	0	0
Garlic.....	lb.	0	8	0	Spinach.....	bushel	4	0	0
Herbs.....	bunch	0	4	0	Tomatoes.....	dozen	1	6	0
Horseradish.....	bundle	4	0	0	Turnips.....	bunch	0	4	0
Lettuce.....	dozen	0	6	0	Vegetable Marrows.....	dozen	0	0	0
French Cabbage.....	dozen	1	6	0					

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JUNE 29—JULY 5, 1876.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.			
29	Th	Richmond, Wisbeach, and Torbay Shows.	78.9	48.5	60.8	8	48	8	18	1	26	11	49	8	8	87
30	F	Crystal Palace and Oxford Rose Shows.	78.1	48.8	60.7	8	49	8	18	2	42	morn.		9	8	181
1	S	Marsden and Brookham Shows.	74.8	50.8	61.8	8	49	8	18	8	59	0	2	10	8	182
2	SUN	8 SUNDAY AFTER TRINITY.	78.4	51.2	62.8	8	50	8	18	5	14	0	19	11	4	16
3	M		74.0	50.2	62.1	8	51	8	17	6	26	0	41	12	4	20
4	Tu		76.1	50.9	63.2	8	51	8	17	7	30	1	11	18	4	24
5	W	Westminster Aquarium Show. Royal Horticultural Society—Fruit and Floral Committees.	77.1	50.9	63.7	8	52	8	16	8	21	1	54	14	4	40

From observations taken near London during forty-three years, the average day temperature of the week is 74.5°; and its night temperature 49.9°.

STRAWBERRY FORCING.



REPARATIONS must be made for the next year's supply as soon as the last dishes of Strawberries are gathered from the late-forced or protected plants. A gardener's life is a regular round of preparations; and, as a rule, he who succeeds the best is he who looks ahead the farthest and commences his preparations for a given crop a few days or week before the orthodox time usually calendered for "making a start." A good start is the first

element in winning the race. "Start early and keep plodding on regularly. Be master of the time and not its slave," was once the advice given to me by one of the best of gardeners. I have proved its value. When I have failed—as most have failed—in producing a given crop in the best manner, it has usually been the result of a "bad start"—starting late and trusting to extra subsequent endeavours to make up for lost time. True there is such a thing as being "too fast," but that hardly applies to the work of Strawberry-forcing. I have endeavoured to be as fast as possible, but have never had good crops of Strawberries too soon, and, in fact, could never produce them soon enough, except by starting early and then giving extra—that is, the best—attention in my power in perfecting and maturing the plants. When one does this and finds it necessary for success there is no room for deferring at the outset and trusting to extra care to bring up arrears.

In Strawberry-forcing there is, as a celebrated parliamentary orator has so often put it, "three things I wish to call attention to." These "three things" in the Strawberry decalogue resolve themselves into three earlies which must be provided to find a fourth—early runners, early potting, and early maturing. By producing these, and by no other means that I am acquainted with, can the fourth be found—namely, early fruit. Suppose now, by way of fixing the matter on the memory, that I step at once from the three earlies which are essential to three later which are desirable. The runners, then, should be in their fruiting pots late in June, be matured late in October, and produce, if required, ripe fruit late in January.

Early potting is of the first importance, and to have fruit at the earliest possible date the plants must not only be in their fruiting pots by the time named, but they must be stout and sturdy plants. This season the runners are later than usual, and it is only those who have vigorous young plants who will be able to have runners established in good time. Old plants do not throw out runners so soon as do young plants, neither are they so vigorous and fine. The practice, therefore, of planting a bed of Strawberries annually in July is urged as a useful practice—useful as affording early and fine runners for forcing, and also fine trusses of fruit. Runners, too, which are taken from young plants, are not drawn in their early stages by a mass of surrounding foliage—a matter of the greatest moment, for if weakened

and drawn during the first few weeks after becoming plants they cannot form robust and fruitful crowns in the short season during which they must be perfected and matured. Runners, then, must be rooted early under full exposure to light and air, so that they are dwarf sturdy plants with their leaves spread horizontally instead of long lanky plants with upright leaves and semi-blanching petioles.

There are various ways of rooting the runners with the object of gaining time and saving labour. Some root their runners in their fruiting pots on the principle of preventing a check by subsequently potting them. I do not think that that is the best plan, and for two reasons—first, the soil must be made so firm that the roots are not emitted freely and quickly; and second, because when the pots are necessarily spread over a large space of ground watering cannot be carefully done, and while the soil in some pots will be too dry, that in others may become sour by extreme wet. Much experience has told me that any one of the three following modes is better than that above mentioned. Layer the runners in small pots of moderately firm but rich light soil. The best compost which I have found for quick rooting has been composed of equal parts of loam, sweet decayed manure, and crushed charcoal. The pots must only be filled to within half an inch of the rims, otherwise sufficient water cannot be afforded the plants in hot weather. That is a trifling matter to mention, but it is by attending to "small details" that success is attained, and that, as an eminent man once said, is "no trifle." The next mode is to spread 8 inches of similar soil over the surface of the ground and peg the runners into it, transferring them when rooted into the fruiting pots. That is a good plan if care is taken to peg the runners thinly. A third mode also good—very good—is to peg each runner to a separate bit of freshly-dug turf about 8 inches in diameter, previously watering the turves with tolerably strong manure water. Roots are freely emitted into these enriched stations, which can be placed in the fruiting pots with little or no mutilation or disturbance of the roots of the plants. After trying all the three modes I prefer the first and the last. The turves should be partially sunk in the soil to reduce watering—indeed their advantage is in saving watering and rendering one independent of a careless waterer.

The final potting is an important operation. The plants must be in a good state, the soil must be of a sound "wearing" character, and the work of potting must be well done. As soon as the small pots are fairly filled or the turves permeated with roots the plants must be placed in the fruiting pots. There must be no approach to being potbound or a dense matting of the roots before the final potting, or a check will be given which cannot be afforded; a steady uninterrupted growth is indispensable to an early perfecting of the plants.

The best soil that I have found for growing the plants in is turf which has been pared from good heavy land, and laid up in the autumn, spreading between every third layer of turf a layer of rich manure and a sprinkling of soot. This is

chopped down and a peck of bone dust is mixed to each barrow-load of the soil. But the best of soil cannot compensate for defective potting, incorrect watering, and negligence generally. The pots must be clean and the drainage perfect—that is, the crooks must be placed so that the water can pass out of the pots and yet so that worms cannot pass in. I find that so long as the soil is prevented mixing with the drainage that the first crook cannot lay too closely over the bottom of the pot, and over this there should be carefully arranged other crooks, which must be protected from the soil by moss or clean flakes of manure. Simple as the practice may appear, there is art even in crooking a pot, and that work should always be done carefully and thoughtfully, it not only being literally at the root of the matter but a prime element of success in the cultivation of all potted plants. Crooking cannot be taught on paper; it can only be mentioned as important, and the intelligence of the cultivator will do the rest.

Special care must be taken that the plants are not dry at the time of potting; the soil must not, of course, be soddened with wet, but to pot a plant when the ball is dry betrays either great ignorance or discreditable carelessness. The plant must not be placed too high in the pot. Filling the pots too full of soil has always been, and so it continues to be, one of the commonest errors made in gardening. To see the soil piled round the stem of a plant and almost or quite level with the top of the pot is only pardonable when done by the good old dame living in the thatched cottage. The soil in Strawberry pots should never be nearer than half an inch of the rim, and should be perfectly level, very firm, and the crown of the plant quite clear from the soil. Neither must the soil be firm and smooth on the surface and light beneath, but it must be firm from the bottom. There must be no hurrying and slovenliness in potting Strawberries, but the work must be thorough and workmanlike. The soil must also be in good potting condition. If used either too dry or too wet it is tantamount to depriving it of its greatest virtues. These are apparently small matters to dwell on, but they are really great in their import, and to ignore them is to invite failure; they therefore cannot be too strongly enforced and urged as worthy of attention, especially by the young and inexperienced who, if they are worthy of the craft, are seeking to honour it by the excellence of their work.

After potting the plants will require watering, but not for a day or two if the soil has been right and rightly used, and the entire work has been well done. Watering, however, must be left to individual judgment, with the remark that, to use a plain term, there is "no sense" in watering a plant immediately on its being potted. A little remains to be said on the after-management of the plants, but it is not necessary to say it now, and space at present will be more seasonably occupied by enumerating the sorts that I have found best for pot culture. For the earliest forcing my choice falls on Black Prince and La Grosse Sucrée; for early forcing a large batch of Vicomtesse Hérisart de Thury and Garibaldi (are these distinct varieties?), then President and Keens' Seedling, completing with British Queen. These sorts with good culture will produce ripe fruit over a period of four months. For early work 48's or 5-inch pots are quite large enough, but for the latest forced crops, 32's or 6-inch pots may be employed with advantage.—A NORTHERN GARDENER.

MODERN SHOWING.

"RADICAL CONSERVATIVE" has brought forward a subject which needs to be discussed. "Big" shows, "big" prizes, and "big" plants are all very well in their way; but, as "F. H. S." says, neither should be encouraged at the expense of the original object for which shows were established. Judges, by giving the preference to big plants, have been the means of making many exhibitors grow their plants as big again as they have bloom to cover them, for they too often grow them one-sided. Last year I visited for the first time a show of some note for specimen stove and greenhouse plants in the north, and was very much disappointed to find most of the plants (in fact all on which it could be practised) were disfigured in this manner. The whole of the bloom is pulled on to one side, leaving the other completely destitute. Anyone after having a peep "behind the scene" will turn away a little disappointed on finding the plants were only half as big as they seemed to be. I examined one of those monsters—an Allamanda—and I am bound to say had the bloom been tied equally over the plant there would not have been a truss to

every square foot of surface. Now had that plant been half as large with the same quantity of bloom tied all round it I think it would have been a much nobler object and of much more credit to its cultivator.

Large money prizes are also a great temptation to the professed exhibitors, of whom I am sorry to find there are too many. This temptation would not be so strong were cups and medals more used than they are at present, and they would not be the less sought after or less esteemed by the *bona fide* lovers of horticulture. I quite agree with "F. H. S." in saying that shows are too numerous. In this locality (North Durham) nearly every village has its show—a fact which may be considered to say much for the taste and energy of the inhabitants, but what is the result? They all want to be "big," they all want to be biggest; they clash with each other in fixing their days, causing in many instances bitter feelings between societies and individuals, sadly at variance with the original objects for which flower shows were established.—R. INGLIS.

PACKING GRAPES.

VARIOUS methods are adopted in the packing of Grapes in order that they may arrive at their destination in as nearly as possible the same condition as when they were severed from the Vine. I have had Grapes to send from the north-midland counties to both London and Scotland for many years, and have tried different modes of packing, having had careful notes taken of the state of the Grapes on arrival. There is not so much difference between one kind of packing and another, provided the same care in moving and travelling is exercised—that is, I find that more depends on the care of the Grapes after they leave the packer's hands than on his mode of packing them. The best of packing cannot prevent injury arising by rough handling of those not having a direct interest in the packages in their charge.

I have packed in boxes, baskets, and hampers with bran, with paper thick and thin, with paper shavings, and with nothing—I mean with nothing, or next to nothing, in the way of padding, and I have come to the conclusion that the simplest mode is the best. I have found, too, that it is of importance to send by the same train each day, placing the Grapes under the same guard, giving him to understand that he is considered as specially trustworthy, and if he has any pride in the service in which he is engaged—as most men have from guards to gardeners—he will be jealous of his reputation when he feels that his services are appreciated. If there are any men who are particularly indebted to the care of others they are the packers and consignors of fruit.

Yet while the advisability of securing the co-operation of others is urged, it is none the less strongly urged that such aid should not be considered as indispensable, but that the packer should feel himself independent of it by his skill and care in packing his Grapes. A box on which is printed in large characters, "Grapes: this side up," is not always sufficient protection against the box being roughly handled in the hurry and confusion of railway life and practice. Guards and porters do not mean to do harm, but they cannot always prevent some injury being done to goods so fragile and easily injured as Grapes. The best plan, therefore, is first to secure the interest of the man in charge of the package, and then as far as possible to render oneself independent of that interest. If the Grapes arrive in good order do not fail to let the man know it, and if there should be a bunch unfit for table if it is given to him as a reward it will be no fault of his if the next and subsequent consignments do not arrive in the same good state as did the first. Thus much on what may be termed the diplomacy of the subject, and now to the work itself.

I have, as I have said, tried various modes of packing, and will now describe two of the best of them. In sending large quantities of Grapes I have wrapped each bunch in very smooth and very stout paper, like so many small sugar cones. These I have placed dog's-tooth fashion, point to base, and resting on paper shavings. After placing in the box a layer of Grapes more shavings have been placed over them, and another floor made resting on ledges on the sides of the box, and not on the Grapes, and on this floor has been packed another layer of bunches, finishing with more shavings and the lid of the box. Grapes thus packed have travelled well. The secret of success lies in the paper being both stout and smooth. Stout paper does not wrap so closely round the fruit as thin paper, and smooth paper does not rub off the bloom nearly so much as

paper having a smooth glassy surface. Even silver tissue paper rubs the Grapes more than the stout smooth brown paper, while the former affords no protection against "knocks and shakes." Boxes thus packed are, however, liable to be turned topsy-turvy, so I place them in round, flat, shallow plant-hampers, placing sticks in the sides, and bringing to a point above, enveloping with a mat, precisely as if covering a hamper of plants. In that way there can be no turning over, and the Grapes have generally travelled well.

In sending smaller quantities I have found the best "vehicles" to be well-made, shallow, cross-handled baskets—butter baskets, with flat bottoms, and sides about 8 inches deep and flanging outwards. These are simply lined with smooth paper, and the Grapes are placed in them without any further packing material. In arranging the fruit a basket is placed partly on its end and a row of bunches is placed across the lower end, their points resting on the bottom of the basket, following on with other rows similarly placed until the basket is quite filled. The sides of the basket flanging outwards permits of room for the shoulders, and the Grapes naturally wedge each other without being crushed. A few wedges of paper here and there are placed amongst the stalks, and the basket is tied down tightly yet without violent pressure. Such a basket cannot be turned over, and the handle prevents anything from being placed on the Grapes. Grapes thus packed invariably arrive in good condition—better, indeed, than by any other mode, and as I find a large basket holds a good number of bunches and the packing is quickly done I intend to adhere to the system until I prove some other plan to be better. I learnt it from a large London fruiterer, who informed me that by no other mode of packing did the Grapes arrive in such saleable condition.

Another matter I find to be of importance, and that is when a bunch of Grapes is cut from the Vine never to lay it down, but place it at once in the basket, and this must be done at one movement. There must be no wriggling and turning and fitting. The eye and the hand soon become accustomed to their work, and a glance tells which bunch to cut to fill a given space, and which side should be placed downwards in packing. Injury is often done by needlessly moving and rubbing the Grapes in cutting and packing them. When we find that Grapes lose value to the tune of 2s. a-pound by having the bloom rubbed off we appreciate the importance of care in packing and sending them.

These remarks apply to the regular practice of sending Grapes for table purposes and not for exhibition, when not a speck of bloom must be removed if they are to find favour with the judges.

Further information by those having experience in the packing of Grapes could not fail to be useful, for at this period of the year the subject is one in which many are interested.—A. N. G.

OUR BORDER FLOWERS—IPOMOPSIS.

THERE are among our border flowers many beautiful families of flowering plants, but, perhaps, none more striking than *Ipomopsis* elegans. Introduced as far back as 1830, it might then have had a little praise lavished upon it, but now it is seldom seen, and not even known by many young gardeners. *Ipomopsis* elegans and its varieties are dainty gems to be admired by all lovers of border flowers. I must confess that they are delicate subjects to deal with; nevertheless, they can be brought into subjection by careful tending.

They are biennials and hardy enough for our climate during the summer and autumn. They are rather tall in habit, flowering in long terminal spikes. A group of *Ipomopsis* in various colours has a charming effect as a centre for a large bed, or as patches in the border, and are all the better if they can have a sheltered spot to grow in. They are handsome plants for indoor decoration during the summer months, and ought to be in all gardens.

Seed can be procured from most of our large seedsmen, and should be sown about midsummer in well-drained pots, using very light sandy soil. The pots should be placed in a cold frame thoroughly ventilated, and must be closely watched lest the soil gets too dry or too wet, for both are injurious. When the young plants have made a few leaves and can be handled they may be thinned-out and placed three or four round a 4-inch pot, in a compost composed of sandy peat, loam, and leaf soil, with a little coarse grit or charcoal, and with perfect drainage. They should be carefully shaded after potting until

they have recovered from the shock. A cool dry greenhouse suits them exactly. They cannot endure either frost or damp, both being fatal to them. After being hardened-off in the spring they may be put in their places at the end of May, and I venture to say that they cannot fail to reward any amount of care bestowed upon them.—VERTAS.

IN AND ABOUT THE TORQUAY LANES.—No. 2.

A WELL-KNOWN supporter of the Darwinian theory of the gradual transmutation of species sustains the theory by reference to plants. Whether his inductions are conclusive I will not inquire in these columns, but I will notice several species here which are believed, and in some instances have been proved, to be the originals of some of our kitchen-garden crops, for all these originals are natives of this neighbourhood.

Walking by the sides of the meadow ditches near Tor Abbey you find the *Apium graveolens*, or wild Celery. It is now in flower, and its stems nearly 2 feet high. The flavour of the leaves is harsher than that of the cultivated Celery. On the borders of the Paignton sands grows *Beta vulgaris*, or common Beet. It is also now in flower. The same locality is also the birthplace of the Paignton, or, as gardeners have agreed to call it, the Penton Cabbage, and I will here observe that in no district of England are finer Cabbages grown. They are large and vigorous in every cottager's garden; but those brought to market—and a cartload has passed whilst I am writing—are models in form and size.

No one who has tasted the Paignton Cabbage only in the vicinity of London is able to appreciate its merits. Grown here by the seaside its large compact white heart and the very large prominent midribs of its outer leaves are, in my opinion, superior to Seakale, being sweeter, nearly as tender, and with rather more flavour. Mentioning the Seakale, *Crambe maritima*, reminds me that it is a native of the sands near here, and was brought into cultivation from plants collected on Slapton Sands in 1795 by Mr. Curtis, ancestor of him now at the Devon Rosery. It is still found on those sands and at Dawlish, about twelve miles from Torquay.

The large yellow flowers of the parent of all the Cabbage-worts, *Brassica oleracea*, are now to be seen on cliffs surrounding Anstis Cove, and so are those of the Carrot, *Daucus Carota*, close by at Marychurch. Of our cultivated fruits the parents of our Red Currant, *Ribes rubrum*; of our Gooseberry, *Ribes Grossularia*; of the Plum, *Prunus communis*; and of the Cherry, *Prunus Cerasus*, are in the Berry Pomeroy Woods and elsewhere around.

In one of my rambles, seeing a man peeling the turf off from a marshy piece of ground I thought he was "Devonshiring" it as mentioned in my notes on page 482. On asking the question I was told he was "velling it," and that his son was "fiching the turves." In other words, the father was cutting them and the son piling them to dry, so that they would burn more readily. I have been told that if asked what soil they were taking the turves from they might have replied, "From a jugglemear," that being a Devonshire name for a morass.

On the cliffs above where the turf-cutter was at work, and overlooking Anstis Cove, grows our native Burnet-leaved Rose, *Rosa spinosissima*, an offspring from which I believe to be our cultivated Scotch Rose. Be that as it may, an opinion correct or incorrect, I was talking yesterday with Mr. Curtis on the merits of our garden Roses, and he said that after cultivating one thousand varieties he was convinced that if twelve others were added to the thirty-eight which I named in my last communication, those fifty would be unsurpassable by the other 950. We then digressed to the consideration of the merits of Devonian dessert Apples, but the only fact new to me was that of thirty varieties he had tasted, by far the best in flesh and flavour is "Padley's Pippin."

At Bishopstowe and elsewhere in this vicinity I have seen many pots of *Nertera depressa*. Its foliage covering the soil's surface, and its small red currant-like berries clustered over the leaves, are very attractive. If someone would write about its culture in your columns the plant, as it deserves to be, would be oftener a tenant of our greenhouses.

Of our native plants the Spur-flowered Valerian, *Centranthus ruber*, may be named as the flower of Torquay. In the crevices of the cliffs, on old walls, and on stony banks it occurs everywhere, and sometimes in such masses as to be specially noticeable. In the densely shaded lanes around the town Ferns abound, and the specimens are very superior. Of the twenty-

four species occurring I need only specify the rarer—*Adiantum capillus-Veneris*, *Asplenium lanceolatum*, *Asplenium marinum*, *Ophioglossum vulgatum*, and *O. munda regalis*.

Hyacinths grow here most vigorously, and I have just purchased a little volume written more than a century since by a Dutch florist, by whom they were imported. He narrates some curious particulars of their history.

When first imported only single flowers were known and prized, and "all those with double flowers were despised, and in disdain called great cabbages that could not open. But a taste for these arose, and 50 or 100 guilders have been paid for a root."

Of the Tulip the same author states, "Gesner saw the first Tulip in the year 1559 in the garden of Mr. Herwarts at Augsburg, which had been raised from seed brought from Constantinople." He thinks this flower must be a native of Turkey because "its name is derived from the Turkish word *tuipent*, which signifies a cap or turban." It was for the spring-blooming Tulips that the mania became so extravagant in Holland. "This passion rose to that excess from the year 1634 to 1637 that single roots were sold for from 2000 to 5500 guilders. The madness was at last checked by the interposition of the States of Holland and West Friesland, who regulated the price of flowers by a law dated 27 April, 1637!"

The fear that Roses would not be fully blown for exhibiting at the Exeter Show on the 23rd was not verified. I never saw finer specimens than some of those exhibited by Messrs. Curtis & Co. and Messrs. Paul & Son of Cheshunt. This county has the climate which specially suits the Rose, and the natives duly appreciate the flower. The railway trains brought them from long distances, and the day was as cloudless and hot as is needed to make an exhibition a great success.—G.

ABELIA UNIFLORA.

This is an evergreen climbing shrub densely clothed with long tapering foliage somewhat similar to that of *Lonicera fragrantissima*, and at this season of the year is putting forth abundant terminal clusters of *Bouvardia*-like flowers—white, with a faint tinge of purple, and yielding a sweet and delicate perfume. The expanding flower clusters have an additional charm in the pretty purple-tipped buds which pale into an almost pure white as they expand. The shrub grows with tolerable rapidity, having reached the top of a 10-foot wall in four years, with an equally strong lateral growth requiring a free use of the pruning knife to keep it within bounds.

My object in thus describing this shrub is to show its great value for clothing the base of high buildings with perennial greenery, for blending with the growth of deciduous climbers, affording a supply of out flowers attractive alike in form, colour, and perfume, and especially as being as valuable in covering the parts which are frequently left bare by taller climbers, the *Abelia* imparting the warmth, neatness, and high finish so desirable in wall coverings.—EDWARD LUCKHURST.

LIME AND ITS APPLICATION.

WITH what Mr. Abbey has written on lime I entirely agree. I have proved the value of lime conclusively, for by its use I have improved the garden crops and saved some tons of manure. About twenty years ago I took charge of a very old garden. There were not many glass houses, but a great number of frames and pits heated with leaves and manure. In these pits Pines, Melons, Cucumbers, Potatoes, and numerous other crops were grown. Leaves were carted during autumn to the extent of nearly a hundred loads per year, and these were supplemented with manure. The result of this practice was that an immense quantity of manure was at disposal for digging into the garden. For many years not only had all this been used, but richer farmyard manure was also carted and applied at the time of winter digging. On taking charge I was informed that the garden was not productive, and I speedily found that such was the case. Potatoes were "all top," Onions "grubbed," Peas long-jointed and unproductive, and fruit trees and bushes were covered with moss. Suspecting the cause I asked for lime. "No," said the owner of the garden, "lime is the great evil in this district; it is a locality of limestone, and the crops burn terribly." I was more than ever satisfied after that expression of opinion that lime was necessary for mixing with the black mass of humus in the old

kitchen garden. I knew there was no limestone there, and I found out that no lime had been admitted for half a century, but was rather shunned as a scourge.

In the following winter I asked that all the manure might be carted from the garden and some loads of road scrapings and roadside trimmings be allowed me in its stead. I am afraid that my ideas were not in harmony with those of my employer, who I found spoke somewhat doubtfully of my abilities, and referred to me as a man of "strange notions." He had the consolation, however, of having extra manure for the farm, which had a soothing effect and making things doubtless more endurable than they otherwise would have been.

I used the road scrapings freely, and also surreptitiously several tons of lime (a kiln is on the estate). I limed quite as freely as recommended by Mr. Abbey, having it brought into the garden and buried out of sight on every convenient occasion. Next year the crops were better. In the autumn all the manure was sent away again, and roadside soil, scrapings, and trimmings of ditches and fresh soil of any kind was introduced. This system was carried out for seven years, soil and lime being added until the staple of the garden was quite altered. The crops improved wonderfully, and now the garden is in as good order and as productive as I can wish, and the owner of it instead of referring to the "strange notions" of his gardener, entertains the highest opinion of his judgment and practice. Manure is now again used moderately, but for ten years not a particle was applied to the fruit quarters—Gooseberries and Currants. They had nothing but lime—lime to root and branch, and the moss vanished and the trees were renovated. The garden was just in the state as described by Mr. Abbey, it was full to repletion of food for plants, but that food was "sealed." A corrective was needed to liberate the stored-up gases and render them available for the support of the crops. This corrective was lime, and it did its work well. Every bit of ground was limed by degrees, and the whole is now profitable garden ground, whereon all kinds of crops flourish. That garden was twenty years ago regarded as "worn out." Worn out of what? Simply of natural inorganic constituents, correctives enabling the food with which it was gorged being turned to profitable account by being absorbed and assimilated by the crops.

It is because I have experienced these striking benefits arising from the application of lime to an old garden that I support Mr. Abbey in his able advocacy of its use under all similar circumstances. Lime and fresh soil—rubbish which was not considered of any value—have made the old garden young again, and there are many other old gardens to which similar applications would be of the greatest service; but it is only to old gardens rich in organic vegetable manures to which lime can be profitably applied, therefore it should always be used with discrimination.

When lime is required its application must be thorough. A mere sprinkling is of little or no use; that is why it has fallen into disuse. Its effects are not immediately apparent, for it is not a mere fertilizer; but if slow its benefits are solid and lasting. I recommend a careful perusal of Mr. Abbey's excellent article, feeling assured that it is replete with sound information, and is safe in its advocacy of a practice which, if somewhat overlooked and ignored, is nevertheless a practice of real importance to many cultivators of the soil.—EX-CHISWICK.

PLANTING A SCROLL BED.

As information is sought as to a suitable mode of planting a "narrow bed of serpentine fashion" we cannot do better than teach by example in submitting a plan of the bed at Victoria Park; it has been furnished by Mr. Cole with the accompanying remarks on the "People's Park at the East End."

Victoria Park is 270 acres in extent, and has been a boon of great value to the dwellers of the crowded district near which it is situated. Artisans and their families crowd it on all occasions when the weather is favourable, and it is gratifying to see how they appreciate the flowers that are provided for their enjoyment. Of spring flowers there is a great and varied assortment. Flowering shrubs and weeping trees are also largely represented. Willows are largely grown here, and are picturesque objects on the banks of the ornamental water. Laburnums, Almonds, Double-blooming Cherries, and Hawthorns add to the effect, and the dwarfier kinds of flowering shrubs, such as the *Mexerion*, which is always foremost among

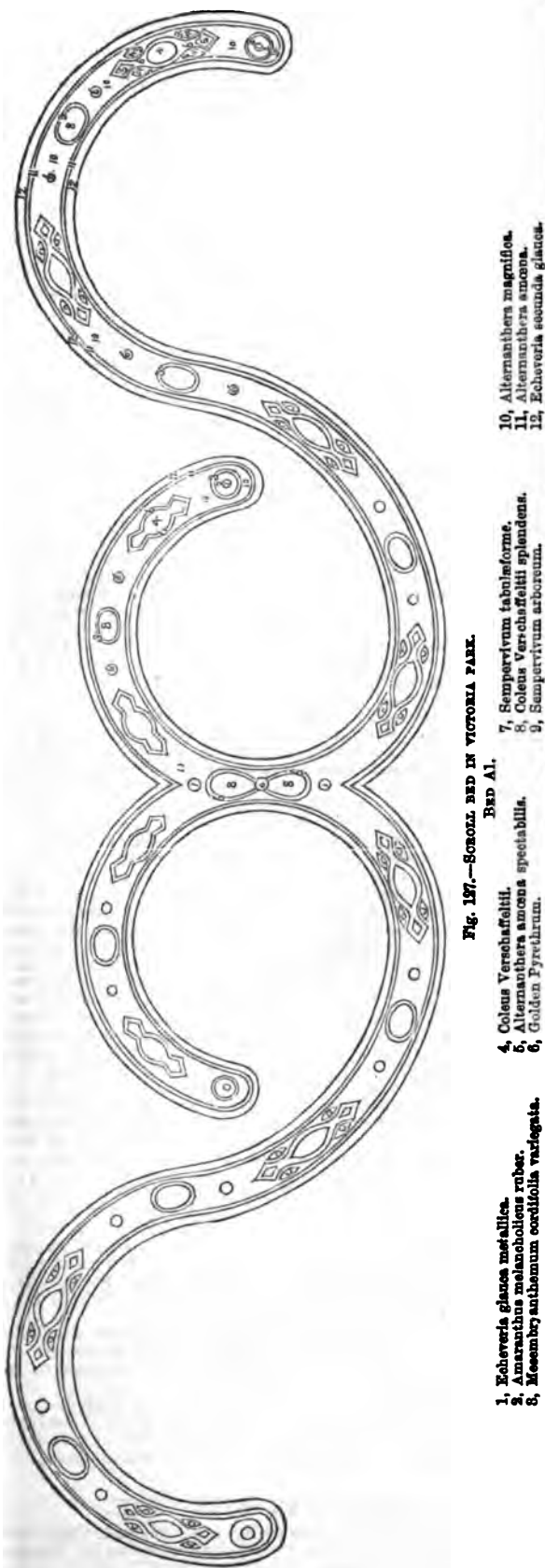


Fig. 137.—SCROLL BED IN VICTORIA PARK.

BED A1.

1. *Echeveria glauca metallica*.
2. *Amaranthus melancholicus ruber*.
3. *Meibomia anthemum cordifolia variegata*.
4. *Coleus Verschaffeltii*.
5. *Alternanthera aeneo spectabilis*.
6. *Golden Pyrethrum*.
7. *Sempervivum tabulaforme*.
8. *Coleus Verschaffeltii splendens*.
9. *Sempervivum arbutum*.
10. *Alternanthera magnifica*.
11. *Alternanthera aeneo*.
12. *Echeveria glauca*.

the spring flowers, and the various kinds of *Berberis*, *Furze*, &c., contribute to the attractiveness of the shrubberies.

The summer flowers are of the choicest description, and they are arranged with much taste, particularly the geometrical beds, which are richly planted. Among the many attractive arrangements the scroll is always artistically planted, and it was, perhaps, never more admired than when planted as shown in the accompanying design. The Park is under the able superintendence of Mr. McIntyre.

THE WEST KENT HORTICULTURAL SHOW.

THE patronage and support bestowed on this Society, the district which it embraces, one of the most fertile and picturesque in the county of Kent, and the site of the Exhibition, Camden Park, Otford, are a combination of advantages which should result in a prosperous Society and successful annual displays. The Exhibition of last Saturday was in many respects an excellent one, and would have been better had all those who applied for space, which was reserved for them, come forward and occupied it.

Unquestionably the most important contributions made to the Show were those of the London nurserymen, and when we find such firms as Messrs. Veitch, Williams, Rolliason, Wills, Carter's, Laing, and Mr. Ley of Croydon represented, we have at once sufficient in quantity, quality, and variety of plants to produce a display worthy of all the patronage that it can receive. Well, all these firms had admirable groups in the large tent, and besides there were in this and three other marquees arranged numerous private competing collections, some only moderate but others very good, making altogether a show which, considered as a local show, must be pronounced a gratifying success.

Good country shows appear to have a freshness all their own. Visitors do not attend them in a languid sauntering manner as if it would hardly be the "correct thing" to stay away, but they come with appreciative appetites eager to inspect and admire the horticultural work of the district in which they are interested, and to take note of the rarities which the professional horticulturists stage for their approval. Well-managed local societies do much for horticulture, and we cordially wish them success, regretting that we are not sufficiently ubiquitous to see and our pages sufficiently elastic to record all that are worthy of more than local mention. We were fortunate, however, in visiting the West Kent Show, and were gratified to find the day favourable for a large attendance of visitors, from the Empress Eugénie (who by her kindness and affability is highly popular in the district) and her suite, and all the *élite* of the district, to the "working bees" who labour in or are interested in the labour of others in the hive horticultural.

We have said that the London nurserymen exhibited well, and will therefore first briefly glance at their collections. One end of the long tent was occupied by the collection of Messrs. James Veitch & Sons, and the other end by the collection of Mr. Wills. Messrs. Veitch's group was surmounted with a plant of *Nepenthes distillatoria* with twenty pitchers, the collection including also *N. Hookeriana* and *N. hybridum maculata*. Orchids were represented by *Oncidium crispum* and the distinct and fine *O. crispum flavum*, a splendid spike of twenty-five charming flowers; *O. stelligerum* having a spike 6 feet in length; *Dendrobium filiforme*, *Odontoglossum Alexandræ*, *O. Rossii*, and *O. Roeblii*, and *Thunia Bensoniæ*. Noticeable also were the new double white *Azalea indica*, *A. imbricata*, which as its name denotes is not semi-double, but the petals are perfectly imbricated; *Anthurium Scherzerianum longispatum* with spathe 6 to 7 inches long; *Aralia Veitchii gracillima* in all its slender elegance; *Asplenium ferrulaceum*, bright green, chaste, and beautiful; *Adiantum digitatum*, and *A. radiatum*; *Blandfordia nobilis*, gay and very fine; *Phyllanthus roseum pictum*, the choicest of the *Cypripediums*; curious *Darlingtonia* and *Cephalotaxus*; handsome *Gloxinias* and greenhouse *Rhododendrons*. Such were a few of the plants at one end of the tent, and we now look at the other.

Mr. Wills's. At the corners were effective plants of *Yucca filamentosa variegata*, and between them Orchids—*Cattleyas* in fine varieties of *C. Mossii*, and *Odontoglossum Alexandræ*. In the front of these were the Golden *Caladiums* Princess Royal and Princess Teck, flanked by *Nepenthes phyllanthifera* and *N. Sedeni*. Turning the corners we observed *Cumera picturata*; *Oretons*, small plants, but in good colour and variety; the seldom-seen *Cochlostema Jacobiana*, *Anthurium crystallinum*, flowering *Begonias*, *Bertolonia superbissima* and *B. miranda*, *Paulinia thalictroides*, and Ferns in variety, including *Gymnogramma Pearcei*, one of the most elegant Ferns of this or any genus. Between these two extreme end collections the following groups were arranged, occupying a length of 60 yards.

Mr. Williams's group consisted of about a hundred plants, comprising Orchids in variety, including the finest of terrestrial Orchids—*Cypripedium spectabile*—in healthy foliage and with

fine flowers; *Nepenthes ampullaceum*, *N. Hookeriana* and *N. lavis*, *Sarracenia flava*, and the distinct and beautiful *S. flava* major; a bright plant of *Epidendrum vitellinum*, and near it *Todes superba*; *Habenaria elegans* variegata, very clear in its markings; a fine plant of *Orchis foliosa*; *Cycads*, *Palms*, including *Geonoma princeps*, a *Palm* of massive habit and great promise; and such fine-foliaged plants as *Reidia glaucescens*, *Aralia Veitchii gracilima*, *A. elegantissima*, and *Jacaranda mimosifolia*.

Next came an equally large group from Messrs. James Carter and Co. These consisted of room and conservatory decorative plants, including *Palms*, *Ferns*, *Caladiums*, *Dracenas*, *Marantas*, *Dieffenbachias*, *Phormiums*, &c., all in great variety, producing an ornamental effect. Messrs. Carter also exhibited *Coleus* Duke of Edinburgh in fine colour and a choice collection of succulent plants.

We now arrive at the collection of Messrs. W. Rollison and Sons. This was a capital group. At the back were *Palms*, *Dracenas*, *Cycads*, &c., brightened by *Pandanus Veitchii* and good plants of *Spiraea palmata*. In the front were *Cypripediums*, including *C. spectabile* and *C. caudatum*, very fine, and the chaste *C. niveum*; *Goodyera vellutina*, *Filmy Ferns*, and succulents.

Adjoining was Mr. Ley's collection, in which *Palms* and *Cycads* predominated, and under their ample fronds were *Caladiums*, *Marantas*, *Crotons*, *Dracenas*, &c., and a capital flowering plant of the pure and sweet *Pancratium fragrans*, making altogether a freely arranged and effective group.

Last but not the least in effect was Mr. John Laing's collection. The back plants were composed of *Pandanuses* intermixed with *Palms* and *Phormiums*, and in front of them the bicolor *Pelargoniums* for which Mr. Laing is celebrated. Amongst these were *The Shah*, *Princess of Prussia*, very fine; *E. H. Pollard*, *Earl Rosslyn*, *Exquisite*, a very superior variety, and, appropriately, *Empress Eugénie*. In this group were several cut spikes of *Delphiniums*, stately and beautiful border flowers worthy of notice; also cut blooms of *Pyrethrums* and plants of the curious succulent *Sempervivum Bollii*.

Such are a few of the plants included in these collections. They are mentioned because they are worthy of mention, and because we have seldom an opportunity of enumerating them, seeing them only on Wednesdays an hour or two before going to press. The plants noticed are amongst the finest for decorative purposes, and every one of them is worthy of being added to collections in which they are not included.

In glancing at the classes no pretence is made to notice all the collections or to enumerate the names of the whole of the prize-winners. For twelve stove and greenhouse plants Mr. Mumford, gardener to J. Scott, jun., Esq., had the post of honour with fairly good plants, but the tying of them had been postponed too long, and many of the flowers were, as a lady observed, "looking sideways." For six plants Mr. Moulard, Belvedere Park, was first with healthy and not too closely-trained plants. In this group *Ixora Williamsii* was very well exhibited. Mr. Baynham, gardener to Mrs. R. Gladstone, was second, his collection including an effective plant of *Meyenia erecta*; Mr. Smith, gardener to — Brown, Esq., having the third place. For nine fine-foliaged plants Mr. Moore, gardener to W. O. Pickersgill, Esq., was placed first, his collection including one of the best-grown plants of *Cycas revoluta* which we have ever seen. For six fine-foliaged plants Mr. Crane, gardener to Mrs. Green, had the first place, his group including a very large specimen of *Nepenthes distillatoria*, *Crotons Weissmannii* and *angustifolia* in good colour, *Adiantum farleyense*, *Thrinax elegans*, and *Kentia Fosteriana*. Mr. Smith, gardener to G. W. Bourne, Esq., was second, his best plants being a capital *Dicksonia* and a very good *Alocasia metallica*; Mr. Baynham being third, who staged an admirable *Alocasia macrorrhiza variegata* and a good *Dieffenbachia Bowmannii*. For six exotic Ferns Mr. Lovibond, gardener to J. G. Hepburn, Esq., Sidcup Place, won with *Blechnum brasiliense*, *Lomaria gibba*, *Gymnogramma peruviana*, *G. Martensii*, and *Neottopteris virens*. Mr. Cook, gardener to W. Nash, Esq., was second, his group containing a fine plant of *Woodwardia radicans*; and Mr. Baynham third, who exhibited capital examples of *Gymnogramma Lanchana* and *G. peruviana argyrophylla*. For single specimen Ferns Mr. Aiken, gardener to J. Batten, Esq., was first with *Gleichenia flabellata*, a fine plant 4 to 5 feet in diameter; Mr. Lovibond being second with *Oclobium princeps*; and Mr. Dack, gardener to G. E. Forrest, Esq., third with *Dicksonia antarctica*. All the plants above mentioned were very well grown, the Ferns especially being in superior condition.

For the "most effective" arrangement of twelve plants in 32-sized pots Mr. Lovibond was first and Mr. Mumford second; but twelve small plants cannot be made to look effective on 32 square feet of boards, and a far better effect would be produced to set apart a given space and let each exhibitor occupy it with what number of plants he likes. A little useful artistic grouping might then be produced; but in the present instance, although the plants were good, they looked thin and

unattractive. *Pelargoniums* were, as a rule, poorly exhibited, except the Bicolors, Tricolors, and Zonals from Mr. Neighbour, and these were well grown but rather too flatly trained. *Fuchsias* from Mr. Neighbour were good in foliage and flowers, and the plants were not too formally trained. *Lycopods* were well exhibited by Mr. Gammon, gardener to O. Boosey, Esq. Hardy Ferns were small but very healthy, the prizes going to Mr. Neighbour, Mr. Clifford, and Mr. Gammon. *Gloxinias* were good, especially Mr. Osborne's first-prize collection. *Dracenas* were medium-sized healthy plants; Mr. Moore, Mr. Baynham, and Mr. Moulard securing the prizes. We may, however, remark that oiling the foliage to make it glossy is a "dodge" not worthy of imitation. *Achimenes*, except those from Mr. Crane, were only indifferent. *Begonias* (foliage) were extensively shown and the plants good, Mr. Talmage, Mr. Jarvis, and Mr. Neighbour receiving and meriting the prizes. In flowering *Begonias* Mr. Mumford won with *Vesuvius*, *Sedeni*, *Model*, *Dr. Masters*, *Stella*, and *Master Ernest*. *Caladiums* were exhibited in admirable style, Mr. Gammon having the premier award for six varieties with plants 3 feet high and through, Mr. Monckton being placed second, and Mr. Mumford third. An excellent example of *C. argyrites* was exhibited by Mr. Monckton. All the varieties were healthy and in good colour.

Of *Roses* there was an attractive display. Messrs. Paul & Son, Cheshunt, were first in the class for forty-eight varieties, and, indeed, in the other classes in which they exhibited, many of their blooms being very fine, the finest that have this year been exhibited. Other prize-winners were Mr. Gibson, Mr. Todman, Mr. Noble, Mr. Talmage, Capt. Christy, &c.

A tent was devoted to and well filled with Table Decorations. For the best table, 10 feet by 5 feet, open to ladies of West Kent only, there were nine competitors. The decorations were generally heavy, and the prizes appeared to be awarded to the heaviest. Miss M. A. Goldingham had the first prize, her nine glass baskets, &c., being filled with Grasses, flowers, and foliage artistically disposed. Mrs. W. Nash, Rookery, Downs, being second, whose decoration included fruit; Miss Lovibond being third with an effective arrangement, including good fruit, an extra prize going to Miss Hutton and Miss Boosey for a chaste arranged table. But the lightest and most tasteful arrangement of all was the table of Miss Mary Waring, and we cannot but think it an oversight to have passed it without recognition. The decorations consisted of Grasses, Ferns, and white *Roses*. The Judges in this tent had "large eyes," but Miss Waring secured the lion's share of public appreciation. The single decorations were very good, Miss Lovibond and Miss Hutton being the most successful. The best basket of cut flowers came from Mrs. E. H. Brimble, Freeland Road. Glasses of hardy Grasses and wild flowers were highly creditable for taste in arrangement, the Misses Waring securing the prizes.

FRUIT.—Some very good fruit was staged. For a collection of six dishes Mr. Baynham was first with a small Pine, black and white Grapes well finished, Melon, Peaches, and Strawberries; Mr. Neighbour being second with a collection much the same, but with a dish of Nectarines in the place of a Pine. For the best Pine the prize was secured by Mr. Churchfield, gardener to H. Lyttleton, Esq., Westwood House, Sydenham, for a Queen of 4½ lbs. Mr. Baynham had the first prize for Melons with Colston Bassett, Mr. Moore being second with Blendon Hybrid. For Peaches Mr. Cook won with Royal George, followed by Mr. Gammon with Early Albert. For Nectarines Mr. Neighbour was first with Blurge, very good; Mr. Field, gardener to N. Palmer, Esq., being second with Violette Hative. For the best single bunch of Black Hamburg Grapes Mr. Moulard won with a fine bunch, Mr. Pollock being second with a smaller but well-finished bunch. For the best single bunch of Muscat of Alexandria Mr. Pepper, gardener to G. W. Norman, Esq., won with a fine but unripe bunch "out from a Vine over a hundred years old." For three bunches of Black Hamburgs Mr. Crane, Mr. Green, and Mr. Moore were placed in the order of their names for very excellent examples of culture; and for three bunches of white Grapes Mr. Moulard was first with highly superior examples of Buckland Sweetwater, Mr. Crane being second for capital Royal Muscadines, and Mr. Smith third for Buckland Sweetwater. Strawberries were small, except a dish of Sir J. Paxton from Mr. Neighbour.

Some good vegetables were exhibited, the best Cucumber being Tender and True from Mr. Neighbour and Mr. Lane. For the collections of vegetables the principal prizes went to Mr. Neighbour and Mr. Eke.

Mr. Todman, Eltham Nurseries, exhibited a large and good collection of Conifers. Prizes were also awarded to cottagers for vegetables and window plants. A meed of recognition is due to the officials of the Show for their courtesy and attention.

THE EXETER ROSE SHOW.

OWEN more the Rose show season has commenced, and once more the fair capital of the prehistoric west has led the van. Exeter the city of flowers, the birthplace of Devonensis, one

of the best of the tea-scented family, Exeter the Florence of England, has once more held a brilliant court for the queen of flowers—the fragrant, the comely, the glorious Rosa.

Here alone has the Show been held on the day originally fixed, and here once more brother has joined hand in hand with brother after an interval of twelve weary months, and faces that have lived in the memory through months of bitter winter and ungenial spring have again lighted up with pleasure as they saw their old friends and foes once more engaged in that best of all occupations, staging Roses. Ah! and what a treat it is to see the hero of a thousand fights—the Rose-king of Cheshunt, the man to whose care, and love, and labour we owe so many gifts—Cheshunt Hybrid, that priceless boon, a red climbing Tea Rose, possessing the hardiness of Gloire de Dijon, the colour of Antoine Ducher, the rampant growth of an evergreen Rose; Duke of Edinburgh, the pride of Heavittree, the marvel and admiration (as shown for seasons here) of hundreds of worshippers; Reynolds Hole, and a host of others—to see him setting up a box of blooms, his coat off, his wristbands turned up, his whole mind set on his work, now raising gently a Rose with the lightness of a mother's hand brushing a fly from the face of a sleeping child, now standing back, and with head a little on one side contemplating the work from a distance, as an artist looks at his Academy picture, now changing a bloom that to our eyes appears faultless for one that causes us almost to despair as we think of our own productions. All this is, I think, a treat which alone is worth attendance at the Show.

The Exhibition was of a miscellaneous character, and had, so to speak, ramifications of various kinds. The Committee were not content to depend alone on Roses; but (having wisely suppressed the spring show on account of its clashing with the Tiverton Exhibition where the Devon and Exeter Agricultural and the Tiverton Horticultural Societies held their shows at Ascension tide), they gave most liberal prizes for stove and greenhouse and specimen plants, and fruit and vegetables. But this was not all, for close to the entrance to Northernhay, in the Victoria Hall, was held a dog and poultry show, so that the attractions for visitors to Exeter were of a numerous and varied kind.

But what we have to do with is the Rose Show, and not being learned in specimen plants I need merely say that Messrs. Lucombe & Pince and Mr. W. H. Selater surpassed themselves, and perfectly astounded me with the size and beauty of their productions. Messrs. Lucombe & Pince put together one of the grandest collections of plants ever seen. They had two splendid *Alhamandas* (Hendersoni and grandiflora), two splendid plants of *Aphelaxis*, an immense *Bougainvillea* which was a mass of colour, a *Stephanotis floribunda* which made many a fair girl (and "my eyes!" as a school-boy says, what a lot of those there were!) sigh with envy.

But now for the Roses, "our Journal's pets," the flower of flowers, what of them? Was the Show a success or a failure? Were the Roses shown good or bad? I answer, Both. The Show was a success, because for the time of year and considering the weather we have had, the mere fact of seventy-two good Roses being shown made it so; but it was also a failure, because only two or three nurserymen put in an appearance—viz., Paul of Cheshunt, Curtis of Torquay, and Robert Veitch of Exeter. The Roses were a little uneven, and a single glance at any stand would tell us the same story—backward spring, cold nights, bitter east winds. But some marvellous blooms were shown and some of varieties which are rarely, if ever, shown well. Mr. George Paul had the most marvellous bloom of *Monsieur Woolfield* which I or my fellow Judges (Hercules and Mr. Beachey of Torquay) declared never to have seen equalled. He had also splendid blooms of *Etienné Levat*, and one treble of this Rose was remarkably good; also *Monsieur Noman*, that fickle inconstant Rose which will only bloom when wooed by the sun's constant love; Emily Laxton (his own seedling out), and Sultan of Zanzibar, Duke of Connaught (his own children), the former as it should be, *Rosa nigroque similia cygno*, the latter a splendid Rose. Many old favourites too came to the front in an astonishing manner—e.g., Charles Rouillard, Exposition de Brie, and above all others Xavier Olibo, Princess Mary of Cambridge, and Fisher Holmes. Of course he was first for seventy-two and forty-eight trebles. Always at Exeter he may boast, if he ever did such a thing, "*Veni, vidi, vici*." He is not only one of the most successful but one of the most generous of professionals, for he positively gave £10 to be given in prizes for Teas to us amateurs! The Teas acknowledged at last! the most graceful offering, the most well-timed present; for here the Teas are at home, and the late spring has retarded them so much that now they are at their very best.

For his prize there was great competition, and I was left out in the cold with my own particular friends. Mr. Jowitt brought a box of blooms from Hereford out twenty-four hours before his rival's, and yet ran Hercules so hard that the Judges had to give grave deliberation before assigning the rewards. He had a perfectly exquisite bloom of *Souvenir d'Elis*, and also good blooms of sorts which are rarely seen in stands, such as *America*,

Rubens, *Madame Willermos* with wonderful colour, and a *Catherine Mermet* which enchanted me. But of course he was beaten by Hercules on his own ground, for Mr. Baker is, or at least for years has appeared to be, invincible. The latter had lovely blooms of *Cheshunt Hybrid* and *Marie Van Houtte*, of which varieties he showed whole boxes, and also *Catherine Mermet*, *Devoniensis*, and *Maréchal Niel*. Of course, it is almost needless to write it, that Mr. Baker was first for forty-eight, and how he staged that number is a perfect marvel. I cut every bloom in my collection and only staged twelve (for which, by the way, I was a good second). But here comes Hercules with a couple of cabs full of boxes, he himself smiling complacently from one, and feeling like Grace when he goes in to bat at Lord's. Out they come, box after box. Bless you! weather does not affect him. In vain rude Boreas storms and groans, he cannot enter his paradise. The sycophants are allowed to come in on sufferance there, but they must not be too boisterous, or wo'n't they catch it from those guardian Elm trees. The naturalist need never enter his sacred ground, for of caterpillars or aphides he wo'n't find enough to feed a jenny wren. The rains of heaven may refuse to give their reviving moisture, but what of that? "We," said the old gardener to me, with a sniff of scorn at my pining plants, "we don't care about the rain, we can supply the rain; it's that blasted sun we want." For all around that elysium are cocks, and hoes, and cisterns full of liquid manure, and everything that science can suggest or money supply. And what is the result? Why, he staged a forty-eight which, though not in his best form, made me hide my diminished head with shame as I contemplated my miserable twelve. He had a bloom of *Marguerite de St. Amand* at the corner of his box which one felt inclined to kiss, she was so lovely. There were many, very many, fair Devon maids at our Show whose complexions, beautiful indeed though they were, were far short of his *Marguerite*.

Messrs. Curtis of Torquay showed some very good blooms, particularly in his box of new Roses. He had a very fine bloom of *Star of Waltham*. This novelty, raised by Mr. William Paul, was also well shown by Mr. George Paul, and it appears to be a most valuable addition to the crimson Roses. Its only fault is that it is a little empty at the very centre of the bloom. *Mons. E. Y. Tess* (a most extraordinary name to give a Rose) was also shown remarkably good. *Maréchal Niel* was shown in all classes very fine. I was very glad to see the great improvement that Mr. Robert Veitch has made in Rose-growing. He staged a capital stand of twenty-four trebles. He had a very fine bloom of *Centifolia rosea*, and also *Annie Laxton*. My namesake was in all the nurserymen's stands, and was very fine. It is a little too much like *Annie Laxton*, but is a useful addition, being also very fragrant. *Madame Bougère*—another new Rose, very light pink with a rosette-like flower—was shown fine by Mr. Baker. I believe we may reckon it as a prize. Captain Christy has proved himself a wretched impostor (his namesake I hope will excuse me). He is coarse and open and dirty, and was condemned by all judges. I add the list of awards:—

NURSERYMEN'S PRIZES.—Seventy-two Roses, distinct varieties, three trusses each—first, Messrs. Paul & Son, Cheshunt; second, Messrs. Curtis, Sandford, & Co., Torquay. Forty-eight Roses, first, Messrs. Paul & Son; second, Messrs. Curtis, Sandford, and Co. Twenty-four Roses—first, Messrs. Curtis & Co. Twenty-four Roses, one truss each—first, Mr. R. T. Veitch.

AMATEURS' PRIZES.—Dozen Tea-scented and Noisette Roses, distinct varieties, single trusses—first, Mr. R. N. G. Baker; second, Mr. T. Jowitt; third, Mr. R. W. Beachey. These prizes were presented by Messrs. Paul & Son. Forty-eight single trusses, distinct varieties—first, Mr. W. Cotton. Thirty-six Roses—first, Mr. W. Cotton; second, Mr. Beachey; third, Mr. J. W. Chard. Eighteen Roses—first, Miss Lloyd; second, Mr. Beachey; third, Mr. Chard. Twenty-five Roses—first, Miss Lloyd; second, Mr. J. C. Gould; equal third, Mr. R. Shute and Mr. Chard. Twelve Roses, three trusses—first, Mr. Ensor. Twelve single trusses—first, Mr. T. Jowitt; second, Rev. J. B. M. Camm; third, Mr. Ensor.

OPEN COMPETITION.—Twelve Tea-scented and Noisette Roses, distinct varieties, single trusses—first, Messrs. Curtis, Sandford, and Co.; second, Mr. T. Jowitt. Twelve single trusses of 1874 or 1875—first, Messrs. Paul & Son; second, Messrs. Curtis and Co. Twenty-four trusses any other variety—first, Messrs. Paul and Son. Twelve trusses, H.P. Duke of Edinburgh—first, Messrs. Curtis & Co.; second, Miss Lloyd. Twelve trusses, *Maréchal Niel*—first, R. T. Veitch; second, Mr. J. W. Chard.

And now I have told you of the blooms and of the prizes, it only remains to say that the company was very large and highly select; that everyone looked pleasant and happy and healthy, and not bored to death and pale and tired, as in London; that we had the jolliest of dinners at Mr. Baker's, where Mr. George Paul, Mr. Jowitt, and others talked Roses till almost the daylight began to appear; that we had the great pleasure of hearing that most of the great nurserymen would be in for the Crystal Palace, and that the only regret we felt was that so many nurserymen were unable to come, and that we should have to

wait another twelvemonths before we had another Rose Show at Exeter.—JOHN B. M. CAMK.

THE SPALDING HORTICULTURAL SOCIETY'S SHOW.—JUNE 21st AND 22ND.

AMONGST those places where horticulture may be said to flourish, this metropolis of the "parts of Holland in Lincolnshire" may well take a place. The fact that bulbous roots form an important part of its commerce, and the natural capabilities of the soil, may have led into that direction, and the presence of some very ardent lovers of flowers has still further increased the taste, so that a flourishing Society now exists whose meetings are looked forward to with considerable interest, and form the most notable days in the town's calendar; while the well-known hospitality and kindly feelings of all who have to do with the Society give it a charm which in many more pretentious shows is wanting. A few notes on the Exhibition held there on the 21st and 22nd of the present month may therefore, perhaps, not be unacceptable to lovers of that which far more than angling deserves the name of the "gentle art."

The Exhibition was held as usual in the picturesque grounds of Ayscoughfee Hall, now tenanted by the estimable President of the Society, O. F. Bower, Esq., and the principal productions were arranged in a tent 180 feet long and about 40 wide. Owing to the backwardness of the season, and the Show being a week earlier than usual, the number of exhibits was not so large as usual. This was notably the case with Roses, which were few and indifferent; but in nearly every other class the quality of the flowers was remarkably good. Cottagers, indeed, were unmistakably behindhand, but this was not to be wondered at when one considers the cold and ungenial weather that we have had, and that they are unable to use any appliances to counteract the influence of cold and cutting winds.

The chief exhibitors were Mr. J. Cypher of Cheltenham and Mr. S. House of Peterborough amongst nurserymen, and amongst amateurs Mr. G. F. Burrell, Mr. Bonner, Dr. Stiles, Mr. Gardt, Mr. J. S. H. Wilkinson, and the Rev. B. Beridge. Amongst the plants were as fine specimens of stove and greenhouse plants and Ferns as one would desire to see; while the method of arranging them on the grass, even though it was a flat surface, was preferable to staging, as the plants were below the level of the eye, and thus were seen to greater advantage.

As herbaceous plants always form, both as pot plants and out blooms, a great feature of this Show, one is always sure to find amongst the collections exhibited some of great interest, those shown by Dr. Stiles being models of good cultivation and care. Amongst them were *Campanula pulla*, a lovely dark violet flower, to which the long green segments of the calyx give a unique appearance; *Campanula Hostii*, *C. caudata*, and *C. Van Houttei*; *Aquilegia chrysantha*, *Spiraea filipendula*, *Lilium Humboldtii*, *Lychnis Haageana*, *Delphinium belladonna*, and *Equisetum sylvaticum* grown as I have never seen it anywhere else. I had the opportunity afterwards of visiting the little garden where these are grown, and one cannot but feel surprised at the manner in which they are done. I noticed here *Morina longiflora*, *Catananche cærulea*, *Eugenia glauca*, *Centranthus alba*, *Campanula grandiflora*, *Anchusa italica*, *Campanula trachelidifolia* fl.-pl., *Hesperis matronalis* (double purple), *Habenaria nives*, and a vigorous small bed of *Cypripedium spectabile*, the American Lady's-slipper. Dr. Stiles's stand of thirty-six varieties of out flowers of hardy plants was exceedingly tasteful in arrangement. Mr. Ingram of Belvoir Castle also exhibited a fine collection of out blooms of herbaceous plants, amongst which were the *Edelweiss*, *Erodium manescavi*, *Lathyrus Sibthorpii*, *Onosma tauricum*, *Lupinus arboreus*, and many of those already named. A very pretty collection of bedding plants was exhibited by Mr. Wilkinson, and another by Mr. House, the former being neatly arranged in pans and with considerable effect.

The contest for Table Decorations was very good, and when I say that Mr. Cypher, who is so well known for his taste in these matters, took second, it may be readily conceived that there was considerable taste displayed, and it was so. The centrepiece exhibited by Mrs. S. F. Burrell was exquisitely arranged. It was not so much the quality of the flowers as the gracefulness and elegance of the manner in which they were grouped together that made it so charming. The glaring fault of making the top piece heavy had been judiciously avoided, and the introduction of Grasses and Ferns gave it a very light appearance. It is evident that a better taste in these matters is being developed, and great credit is due to Mrs. Burrell who has set so good an example. Miss Bonner's bouquet for the table was also exceedingly pretty. Of the arrangements of the wild flowers so much cannot be said, and there is here great room for improvement.

The good folks of Spalding have found out that to make flower shows pay something else must be added, and hence a horse show took place at the same time. Of this I cannot be expected to say anything, and I have only to add that delightful weather tended to make everything agreeable, and I hope en-

abled the Society to score a successful innings. Nothing could be better than the arrangement by which the members of the Committee were told off for various duties, nor the heartiness with which they carried out those duties. A plan of the tent was also drawn with the position of the different exhibits, so that there was no difficulty in seeing where the Judges had to go to, and to those who have lately had the pleasure (?) of judging at some shows this will be appreciated. Altogether Spalding sets an example which it would be well if many other places were to follow.—D., Deal.

NOTES AND GLEANINGS.

WE remind our readers that the thirty-third anniversary dinner of the GARDENERS' ROYAL BENEVOLENT INSTITUTION takes place to-morrow at the Albion Hotel, Aldersgate Street, under the presidency of Dr. Hogg. The claims of this institution for the support of horticulturists are so generally admitted that it is needless to reiterate them. We trust that the approaching gathering will be more than usually successful, and that a substantive accession to the funds of the institution will result from the efforts which are being made for a purpose in all respects so laudable and so deserving of support.

— AT the CRYSTAL PALACE ROSE SHOW, which opens to-morrow, the 30th inst., a good display is anticipated, the sunny weather of the last few days and the preceding showers affording hope that the blooms will have advanced to exhibition form. Last year the Show was four days earlier than this year, but vegetation last year was at least seven days earlier than it is this year. Still rosarians are expecting good competition and a successful gathering.

— "O. A. B., Sandhurst," writes for the encouragement of amateurs, that he has gathered thirteen quarts of British Queen Strawberries from about six dozen pots forced in his orchard house. Several of the fruit weighed above 1½ oz., and many above 1 oz. From thirty to thirty-six berries quite filled the quart pot. The plants were potted in 6-inch pots early last summer; placed first under a north, subsequently under a south wall; transferred to the house in November, and placed on shelves immediately under the glass in February. Watered regularly once a-week with liquid manure.

— WE have received from Messrs. James Carter & Co. a basket of Porter's EXCELSIOR POTATOES as the produce of one root. The weight is 5½ lbs., and many of the tubers are of exhibition quality. They are perfectly ripe, having had the protection of glass to shelter them from the inclement weather, but no artificial heat has been afforded them.

— HARDY PALMS FLOWERING AT GLASNEVIN.—There are two fine specimens of *Chamærops* in the grounds at Glasnevin. One of these in rather a sheltered position has repeatedly flowered; the other in a more exposed situation not until this year. The interesting feature of the matter is that the flowers turn out to be of a different sex from those of the other, so that we may expect shortly to chronicle for the first time the fruiting of a Palm in the open ground in this country.—(*Irish Farmers' Gazette*.)

SNAILS DESTROYING WALL FRUIT.

THE case of "P. M." is a difficult one to reply to satisfactorily; and while doubtless many will be willing to give advice, few, it is feared, will be able to advance an acceptable remedy. I was once troubled with squirrels coming over a wall and eating the fruit, and I baffled them by adopting the same plan that is often adopted to keep boys and other marauders on the right side of a wall. I placed along the top of the wall a coping of common mortar, sticking it full of broken glass. The mortar quickly dried and the glass became firm, and I am not aware that a squirrel ever afterwards came over the wall, but I have many times seen them at the top as if "feeling their way." The wall being high the coping of mortar and glass was not so much seen as to be objectionable. The same plan—the glass being put in perhaps a little more closely—would, I think, stop snails. I offer this for the consideration of "P. M." Sticking in the glass is a little tedious, but when once done the barrier lasts for many years, especially if the mortar is good.—W. B. J.

I know what will stop snails from crossing a wall—at any rate, it prevents them from crawling up one from the bottom, and that is coal tar. The difficulty is, that although it does not dry quickly, still it does become dry, and more needs to be

poured where required. As a suggestion, I ask if tar can be mixed with oil; and if so, if that would preserve it from evaporating? If a composition can be made preserving tar in a moist state, I am satisfied that snails will not cross it. If I was troubled the same as "P. M.," and the wall had a flat top, I should walk along the top about once a-week and pour a row of tar from the spout of an old water-can, and should rest satisfied that my fruit would be safe from the attacks of snails from that direction.—A YORKSHIRE GARDENER.

RESPECTING the passage of snails over the top of the wall and destroying "P. M.'s" Nectarines, I think I can offer a remedy both simple and effectual. Place 1½ lb. of resin and 1 lb. by weight of sweet oil in a pipkin, and simmer over a fire until the resin is quite melted. A train of this placed along the top of the wall would, I think, be an impassable barrier to the snails. The great advantage of this composition is that it never dries. If "P. M." tries this remedy and it succeeds in its purpose, it might be of benefit to others if he would kindly state the fact in the columns of the Journal.—F. R. H. S.

A SPRINKLING of common salt on the top of the wall will effectually prevent these vermin, and probably some at the ground edge of the wall would also prevent their ascent. A sprinkling of salt early in the snail season will probably last for the year. Some years ago I could not rear a Tiger Lily flower. The snails first ate the leaves, then the buds, and often the stalk. Seeing the effect of salt on snails I made a slight cordon round the Lily stem. No slug nor snail has faced this. I have had my Lily flowers every year since, and this year there is such promise of them that I think the salt does good, certainly does not harm them.—T. S., Exeter.

WITH reference to "P. M.'s" difficulty (page 487), I presume from the expression "my garden wall," and from the neighbour refusing to remove the Ivy, that it is a party wall, and that "P. M." has command of his own side and no more. Of the top the parties have joint use, and a learned Judge observed that either party might amuse himself with walking on it, though he had never known of an instance. Now to apply this to "P. M." Catching all the snails is impossible, and the trees must be protected by a band of something which the snails will not cross. A solution of a disagreeable salt, such as common salt, alum, or corrosive sublimate, applied to the bricks either on the top or the upper part of the wall, would be effective; but unfortunately every salt which is soluble in water is soluble also in rain, and such a protection would require perpetual renewal. If it were not for the expense a ribbon of copper and zinc soldered together might deter by galvanic action; but perhaps a 6-inch band of oil paint sprinkled while wet with coarse sand, or better with pounded glass, might stand the weather and protect the trees.—G. S.

If "P. M." will fasten a zinc trough closely along the top of his side of the wall and keep full of water during the season of growth he will effectually keep the snails at bay.—E. L.

PEACH BLISTER.

"PREVENTION is better than curing" stands good in all things, including the blistering of the foliage of trees. I do not know a more pitiful sight than a Peach tree badly affected with blister. When once the leaf is affected it never recovers, and it only remains for us to pluck it off. Yes, the very life of the trees must be plucked off. The blistered leaves are generally the first leaves of early spring. These leaves have an important office to perform, but they are blistered. To leave them as they are they become an eyesore and a capital nursery ground for insects; and these little fellows know all about it and speedily avail themselves of (to them) the pleasant places provided.

What is the cause of blistering? is the question often asked. For many years I have considered it may with certainty be placed to the inclement spring, extremes of heat and cold. Is it surprising when we think of it? We have a wall 10 to 12 feet high facing due south, the sun blazing out upon the young foliage. We find the temperature to run up to 80° or 90° in a few hours, and at night the glass will register 5° to 10° of frost. Can we wonder at blistering of the new-born leaf? Would not our hardy Oak, if its young tender foliage were exposed to these extremes, be also blistered? Not only do we

have the burning days and freezing nights, but there are the cutting winds and the chilling storm, one and all antagonistic to the well-being of tender foliage. Is the Peach tree subject to these extremes in its home? The answer must be in the negative, and we must conclude that chilling cold is the cause of blistering.

The remedy is protection. We must screen the trees against extreme cold. Under glass we have little or no blistering of the foliage, but, on the other hand, trees which are fully exposed to the tender mercies of our springs are badly blistered. If we slightly protect trees on an open wall for the night only we have blistering, and yet, again, if we screen the trees just whilst in bloom night and day, and remove the screens altogether when we think the fruit is "set," disregarding the state of weather and whether the foliage is well able to take care of itself, blistering will follow. This I have had demonstrated in a neighbour's garden this spring.

When to take away screens of any kind depends so much on the season and situation that no rule can be laid down, but "never leave off a clout before May is in and out," is a pretty safe rule to act upon. Shelter should be removed by degrees. If four thicknesses of herring-net has been on, take off one at a time, leaving the last two for a considerable time after the others, and if close to the wall and interfering with the foliage, prop the netting off for a foot or two, and it can remain there until the weather is genial. Canvas or tiffany covers are too heavy for day work; in that case I would have old nets hanging some distance from the trees night and day, and allowed to hang a considerable time after the heavier screens have been removed. Old netting is so cheap that no one ought to be without plenty of it.

I have carefully protected the trees in my charge for the last two springs, and though it would be difficult to find trees more blistered than those always have been before, I have had no blistering since I adopted the above plan. I repeat that blister is caused by the leaf being chilled, and the remedy is protection.

When the cause is so clear and the cure so certain, practical men can only smile at the advocacy of applying "nostrums" to the wood in winter to prevent tender foliage being injured by cold in spring. The curl is distinct from the blister, being undoubtedly caused by insects, but neither curl or blister need be allowed where time and means are provided for preventing them.—JOHN TAYLOR, Hardwicke Grange.

CATERPILLARS STRIPPING LIME TREES.

WRITING to us concerning a plague of caterpillars at Somerleyton near Lowestoft, a correspondent states as follows—"At this place there is a very fine avenue of Lime trees; and this year, as was also the case last, they are literally swarming with caterpillars, so much so that some of the trees are now as bare of foliage as they were in midwinter, with the caterpillars dangling from them in threads like spiders' webs. They are also attacking the Elm and the Ash to a limited extent. I may say there are abundance of birds of all sorts on the place, so that the cause cannot be attributed to the destruction of species that prey on insects." Upon examination we find that the caterpillars are those of one of our most injurious insects, known as the Winter Moth (*Chelmatobia brumata*). The late Edward Newman, who devoted much attention to its life history, from personal observation ascertained that some are destroyed by bullfinches and titmice. These and other birds do not suffice to keep the species in check; and although something may be done in the way of killing the caterpillar and chrysalis—in the latter case of course by digging round the trees in the autumn after the season of pupation has commenced—he places more reliance on a winter campaign against the moth, a sticky composition being applied to the trees which prevents the females from going up to deposit their eggs. The best mixture is equal parts of Stockholm tar and cart-grease, which, applied to the trees in November or December, has been proved to be harmless, though if it were put on in April or May the case would be different. Mr. Newman recommends, however, that the bark be slit the next summer. His plan is this: Watch, by examining the trunks of the trees with a lantern during the months named, for the emergence of the moths; then, says he, "should they be numerous—and sometimes they are as thick as bees—destroy by hand all within reach, and the following day daub the trees with a ring of this composition, taking care to leave no side shoots or contact with the branches of other trees for the ascent of the

female. By this means thousands of females have been destroyed in a single plantation in one night; and as each female is calculated to lay two hundred eggs the diminution in the number of the caterpillars during the next season must be considerable."

CLIFTON HALL,

THE SEAT OF H. R. CLIFTON, ESQ.

CLIFTON HALL is pleasantly situated on the banks of the Trent about three miles south-west from the town of Nottingham. Going from the town, the most direct way to the Hall runs through Clifton Grove. This grove, from its proximity to the beautiful windings of the river Trent, the grandeur of its stately old trees, and the luxuriant undergrowth of sweet-smelling wild flowers which everywhere abound in summer, is one of the most charming retreats in the whole valley of the Trent.

The Hall stands far above the river, and commands extensive views of Nottingham, Wollaton, Chilwell, Bramcote, and away towards Derby. It is a large mansion of brickwork, and has evidently been designed more with the intention of securing inside comfort than outside show. About the different nobles who have possessed it since the days of the celebrated Sir Gervase Clifton little need be said; not one of them appears to have taken much interest in horticulture. Even so late as 1884 Captain Barker, in his "Walks Round Nottingham," speaks of the garden being capable of great improvement, and notes a great want of that cheerfulness which marks the influence of a spirited owner. If this volume was revised up to the present time the description would be a very different one. Since the present squire came into power the garden has steadily improved, and it has now risen into eminence.

The pleasure grounds lie chiefly to the south and west sides of the Hall. The flower garden is divided from the other pleasure grounds by a broad gravel walk which runs east and west. South from this walk the ground is formed into fine green banks rising one above another for a considerable distance. Fine old English Yews line the summit of each terrace, and spacious plats of grass intercept each incline. About the centre of the ground there is the remains of an old Roman chapel which is beautifully draped with Ivy. Beds of Rhododendrons, fountains, and choice shrubs are harmoniously arranged here and there on the grass. At the top of this ascent there are some of the finest Evergreen Oaks in England. Judging from their looks they must be between 60 feet and 70 feet high, and they spread out in proportion. Another feature in the way of trees is a long row of Firs about the same height as the Oaks, and each of their stems are completely clothed to the top with Ivy. This has been the case for many years, and the result now is that all the trees are dead or dying, but they still form splendid pillars of Ivy, and in this way are very ornamental.

The flower garden occupies a large plateau on the west side of the Hall. It was entirely remodeled by Mr. Milner two years ago. It is now a most attractive spot. There is a beautiful fountain in the centre. The scroll beds close to this are planted in the carpet style in the summer time, and other outlying designs are filled with Geraniums and other choice bedding plants.

Forming a boundary to the north side of the flower garden is a recently erected and very fine conservatory. It extends 124 feet from the north-west corner of the Hall. It is 80 feet wide, and the large centre dome is 40 feet high. The two side wings are 80 feet high. The ventilators open along the top and at the sides near the foundation. The interior arrangement consists of an ornamental fountain with a large marble basin placed under the dome. Extending right and left from this, in the centre of the floor, there are two beds surrounded by broad pathways. The back wall is built up to the roof, the wall being covered with ornamental lattice-work for training climbing plants to. The door leading from the Hall opens in full view of the front shelf, which is about 2 feet wide and extends the whole length of the house. The floor is tastefully laid with a handsome pattern of encaustic tiles. This conservatory was erected by John Edmonds & Co., Lillie Bridge, Fulham, London, and altogether it is one of the most substantial, ornamental, and perfectly finished buildings that it is possible to conceive. It contains 1800 feet of 4-inch piping. The whole of this is heated without the slightest difficulty with one of Edmonds' No. 6 tubular saddle boilers. Facing the fountain in the centre of the house there is a recess in the

back wall. This is beautifully arranged in a natural-like style of rockwork by Messrs. Pulham & Son, Broxbourne, Herts. In the cavities of this rockery there are many hardy Ferns growing luxuriantly; but the most effective plant about it is the old Begonia Rex. It is not often one sees this plant in such positions, but nothing could be finer.

All the plants in the centre beds are turned out of the pots and planted in the soil. Camellias are just beginning to get hold of the new soil. The beautiful Tree Fern *Alsophila* is doing well in the same quarters. Some young greenhouse Rhododendrons just in flower are worth noting; they include Edgworthii, Countess of Haddington, Aucklandii (very rare and a splendid variety), and Duchess of Buccleuch. These are four of the very finest varieties. Their blooms are white, richly scented, and large in size. Some of the newer sorts of Acers are splendid decorative plants either planted out or in pots. The best varieties here are *A. palmatum*, *A. polymorphum atropurpureum*, and *A. palmatum partitum*. Large numbers of cool-house Palms are planted out, and Tree Ferns in tubs and other fine-foliage plants are grouped about on the floor near the fountain. There is a very fine assortment of climbers planted along the back wall; of course most of them are young, but all are in a healthy growing state, and when a little further advanced the effect will be grand, as they are all of the best varieties. Good climbers are often wanted, the following cannot be surpassed:—*Lapagerias*, red and white; *Clematis* John Gould Veitch, pale blue, rosette-formed, and a splendid variety for select positions; *C. indivisa*; *Passiflora Campbelli*; *Tasmania exoniensis*, flowers bright pink and violet, very free flowering; *T. insignis*, the best of all the *Tasmanias*, with large crimson, blue, and white flowers; *Brachysema undulatum*, *Rhynchospermum jasmynoides*, *Kennedyia ovata* alba, and the different varieties of climbing Roses.

The pot Roses in bloom in the conservatory were the finest I have ever seen about a private place at this time of the year. Some of the blooms of Paul Neron were quite full in the centre, well formed and coloured, and 7 inches in diameter; in fact, they were all so good that I give the names of a few which are evidently well adapted for blooming early in pots—Alfred Colomb, Baroness Rothschild, La France, Charles Lefebvre, Lord Clyde, John Hopper, Clotilde Rolland, Jules Margottin, Marquise de Castellane, Duke of Edinburgh, Madame Victor Verdier, Mademoiselle Eugénie Verdier, Madame Charles Wood, and Madame Clémence Joigneux.

The Azaleas were other subjects of great merit both in form and variety. Mademoiselle Marie Lefebvre is a splendid variety; the blooms are of immense size and wonderful substance. Marquis of Lorne, La Superbe, Stella, and many others might be named amongst the first class. Mignonette is grown largely in pots. Amongst the several varieties Queen Victoria is by far the best. The spikes of bloom attain a great length, and the foliage retains a beautiful green shade, while that of other varieties is quite yellow about the lower part of the stems. Herbaceous Calceolarias were in fine condition, and Pelargoniums, Spiræas, and such-like plants made a combined mass of flower. Seats are distributed in many recesses, and amongst these were some recently brought from Florence, and which were made of earthenware in the form of three large tapestry-pattern cushions resting above each other. They have the recommendation of being both useful and ornamental, and placing them in the open air does them no harm.

My notes on this house have gone rather further than I intended, but one cannot leave it without feeling gratified with the great interest which Mr. and Mrs. Clifton must take in gardening to erect such a magnificent house, and the praiseworthy way in which they have improved the entire place cannot be too widely known. At the back of the conservatory there is a large glass potting house, where the plants are potted without taking them out of doors. There are other two old-fashioned conservatories built into the Hall. These are kept constantly gay with flowers.

The kitchen garden lies in a sheltered position about 500 yards on the south-east side of the Hall. The fruit houses are arranged here. The first is a plant house for supplying the conservatory; next to this there is a Peach house, the trees having been planted this spring. It is intended for a mid-summer supply of fruit, and contains healthy young trees of Noblesse, Royal George, French Galande, Pitmaston Seedling, and Princess of Wales. The latter variety is comparatively new, and bears an excellent character. The next house is a large span-roof viney 80 feet wide. It is planted with a number of sorts. Last year's crop in this house was excellent,

some of the Hamburg bunches weighing as much as 4 lbs., Alicante 6 lbs., and Barbarossas 8 lbs. The fruit is just thinned, and this season's crop promises to be still better than last one, and, like everything else about the place, the condition of this house reflects great credit on Mr. Anderson, the able and persevering gardener, who has carried out so many improvements here.

Madresfield Court Vine was rooted out of this house last year, as it would not keep well, and it is replaced by Pearson's Golden Queen. This was planted last autumn. It has made a wonderfully fine young cane this season, which must fruit well next year. This is an excellent late yellow Grape. It is an extraordinary robust and free grower and fruiter, and I have neither seen nor heard of a single fault it possesses. It is well adapted to satisfy the wants of amateurs, as it is found to do well on the commonest fare. The wood of one and all the Vines is very fine, and they derive their whole support from

finest fruit. Osborn's Forcing French Bean was bearing immense quantities of long pods in 8-inch pots.

The inmates of the stove are all of a choice healthy description. The greater part of a long side shelf is filled with Orchids. There is scarcely a genus unrepresented; some of them by more than a dozen species. The healthy growth and profuse manner in which many of them are blooming show how well they may be grown in a stove. Mr. Anderson has contrived an ingenious method of damping this structure. There is a side shelf surrounding the house, and the pathway is of the same form with a stage in the centre. Underneath the side shelf there is a half-inch lead pipe fixed, and in this there is a row of little holes facing the pathway. When it is desired to damp the floor there is a tap turned at the door, and the whole pathway is damped in an instant without either dirt or confusion, as there has been a plentiful supply of water laid in to all parts of the garden lately. In hot days, or when the fire



Fig. 128.—CLIFTON HALL.

loam and bones well mixed together and carefully formed into a border. There were some fine specimens of Maidenhair Ferns in this house. The friendly shade of the Vine leaves seems to suit them admirably.

Further along there is another large span-roof late vinery. One side of this house was planted last spring, and the opposite side lately. Last year's Vines, and especially Mrs. Pince, is showing some good fruit, and all are making splendid growth. Next to this there is a small pot-Vine house, from which the earliest fruit is obtained. The three last-named structures are heated with one of the "gold medal" boilers, and Mr. Anderson speaks of it in very complimentary terms. Another Peach house contains an excellent half-swelled crop. A large stove, Melon and Cucumber house, and forcing pits and frames have been lately erected on excellent principles by Mr. Foster of Beeston. These are situated outside the kitchen garden wall. Strawberries are forced in the Melon house in the early part of the season. The varieties most esteemed here for this purpose are Keens' Seedling, Black Prince, and President. The crop on these this spring was wonderful; many of the plants in 6-inch pots produced three dozen full-sized fruits. Taking the runners off as early as possible, growing them strong, and not drying them off at any time throughout the winter is supposed to be the cause of them being so good. Tender and True, Telegraph, and Volunteer are the Cucumbers which yield the

best is strong at night, the atmosphere may be kept constantly moist and healthy by turning the water slightly on.

The kitchen garden is kept well stocked with vegetables all the year round. Many finely-formed young standard fruit trees are arranged throughout the garden. The walls are well covered with Pears, Plums, Cherries, Peaches, and Apricots. The walks are all edged with Thrift. It has a pretty effect when in flower. The vegetable plots are divided from the principal walks, with flower borders planted in the old mixed style, and from April to November they furnish large quantities of cut flowers of all descriptions, which are much used for ornamentation in the Hall.—J. MUIR.

MELON CULTURE—STARTING VINES.

I HAVE been very much interested in the descriptions of the more notable gardens of this country which have appeared from time to time in your pages, and to those who, like myself, are unable to visit these, the articles in question cannot fail to be a source of great pleasure as well as profit, for in these notes we obtain glimpses of the management of different subjects under varied circumstances, as well as the more remarkable features in the formation of the gardens described.

In reading the able description of Thoresby Park given by "Q. B." I was much pleased with some of the suggestions

therein contained in regard to the cultivation of Melons. The system there spoken of—that is to say, planting about 14 inches from plant to plant and training up a single stem without stopping until the desired height is attained—is very superior to the old method of growing Melons.

Having practised the mode of culture alluded to I wish to give my experience of it at greater length, seeing that "Q. R." could necessarily not do more than merely mention it in passing. I am convinced that nearly double the quantity of fruit can be procured from the same space by this over the old system of culture. For a few years past we have grown Meredith's Hybrid Cashmere to the extent of one-half of our plants, planting alternately with other varieties. The variety named is not only a good Melon, but it is of strong growth. We allowed it to run up (which just suits the variety), denuding it of all lateral shoots for several feet from the bottom, only, of course, carefully preserving the principal leaves; the intermediate plants being stopped before reaching where the laterals of the others began, and the fruit of the dwarfier plants set as soon as a sufficient number of flowers could be procured open at one time. It is not necessary to say to a gardener how injurious it is to the chances of a crop by setting the first fruit that appears; but so many amateurs of limited experience grow a few Melons that to them the hint may be useful not to do so, but rather cut the first flower or two away until three or four are open and can be set at the same time, for as sure as the first fruit is set and begins to swell it is futile to expect a satisfactory crop on that plant afterwards.

By growing a few plants of such early and free-setting varieties as Malvern Hall, scarlet flesh; and Gilbert's Improved Victory of Bath, green flesh, to be fruited at the bottom of the house; and Hybrid Cashmere, Beechwood, or any of the later varieties at the top, it is surprising how long a small house will continue to supply fruit, and it will also astonish anyone who has been growing Melons on the older method, the quantity of fruit that can be had by the system of closer planting, &c. Our practice is to stop the first joint after the fruit, and after the fruit is fairly set to thin away by degrees all other shoots not required. If the object is the supply of a family we do not consider three or four fruit to a plant too many. If very large fruit is wanted, then one or two had better be taken; although the larger number with liberal treatment will swell to a size quite large enough for ordinary purposes. The system is quite as applicable to frames as to houses, so far as the limited space admits of fruiting two sets of plants, and all the plants require to be planted at the front and trained towards the back.

In my present situation pits are provided for Melon culture which are only one remove from frames (with the exception that ours are heated with hot water); we have trellises which we fix to keep the plants off the soil, on which trellises we train the plants, and this season for our earliest crop we had a space of 24 feet by 7 feet 6 inches outside measurement, in which we planted eighteen plants, and from which we have cut sixty-six fruit of fair size. I do not think it necessary to enter into the details of soil, temperature, and the routine of management, &c., my object rather being to draw attention to the system of close planting, and limiting the plants to single stems, than to detail cultural directions. I may, however, add in regard to the difficulty sometimes experienced with Melons damping-off at the neck, of which Mr. Douglas treated in your issue of May 18th, that I have found it a good plan to place a handful of crushed charcoal round the collar of each plant at the time of planting, and also that I have found it very useful of adopting the old system when convenient of covering over the surface of the beds with slates, &c., on lifting which it will be remarked that the roots are quite matted on the surface of the soil beneath them.

Another observation of "Q. R.'s" so entirely coincides with my own ideas that I should like to say a few words in connection with it—that is, relating to starting Vines in November. On entering on my present situation last autumn I learned that the Vines in the early vinery had always been started on the 1st of November. On taking the matter into consideration I could not see that we should be likely to gain much by forcing in the two duller months in the year, and I decided not to start the Vines till the new year. The Vines broke readily, but we did not by any means push them hard. We set the fruit at about 65° night temperature. When I say about, I mean that was the temperature aimed at, although on very cold nights it was occasionally a degree or two below. There are two Vines of Muscat of Alexandria in the house, and they

set their fruit equally as well as the Black Hamburgs; and on referring back to the books that are kept of the produce of the garden I find that we cut one day sooner than last year, and could have cut a few days earlier had the Grapes been required; and we certainly saved a quantity of fuel, which is of some importance, and also avoided not a little anxiety during the two months the Vines were resting. I may add that the border is an outside one and the Vines old.—J. B. S.

BRAMBLETYE.

THE SEAT OF DONALD LARNACH, ESQ.

BRAMBLETYE is recorded in the history of Sussex as being well known to lovers of the picturesque, and to those of fiction by Horace Smith's excellent novel "Brambletye House." The manor was part of the barony granted by the Conqueror to his kinsman the Earl of Moreton and Cornwall. From the early part of Edward I. the manor was held by the family of De Audeham, with whom it continued till 9 Edward III., when it belonged to John de Sancto Claro, or Seyntelere, a distinguished county family, subsequently connected with the families of Walleys of Glynde, Gage of Firle, and Pelham of Laughton. The last of the male line, Sir Thomas St. Clare, died in 1435, leaving three daughters as co-heiresses, the eldest of whom, Elizabeth, married as her second husband Richard Lewknor. He is supposed to have built the old house of Brambletye, some trifling remains of which and the moat still exist. The family of Lewknor, once the most influential and widely-spread in Sussex, were associated with East Grinstead by property and as representatives of the borough in Parliament for about two centuries. About the end of the reign of Elizabeth the Comptons were proprietors. Sir Henry Compton, K.B. (of the same family as the Earls of Northampton), married Cecilia, daughter of Robert Sackville, Earl of Dorset, and was in all probability the builder of the more recent mansion Brambletye House, as his initials and those of his wife, "H. M. C.," with the date 1681 and the arms of Compton, remain over the entrance of the ruined mansion. The remains of this house are situated in a delightful valley. It was originally a very handsome mansion, and had towers with ogee cupolas, such as were built in the time of the early Stuarts. It is now an Ivy-mantled shell, though several towers and a detached gateway survive to indicate its ancient glory. The immediate successors of the Comptons are not known, but in 1684 Sir James Richards, then created a baronet, is described as of Brambletye House. He was of French extraction, and was knighted for an act of bravery at sea. Subsequently he settled in Spain, and some of his descendants have occupied high positions in the Spanish army. On his quitting Brambletye the house fell to decay. From about 1714 till 1866 it belonged to the Biddulphs, and it then passed by sale to Donald Larnach, Esq., who erected the present mansion a few years ago. It is a commodious and ornamental structure of native stone, overlooking the ruins above mentioned and a great expanse of country.

The grounds were designed by Mr. Marnock, the work being carried out under the superintendence of Mr. Jenks the present gardener. The ground contiguous to the mansion is boldly undulated, and these undulations have been turned to good account. The hills have been clothed with trees and shrubs, and the dells left mostly in a state of nature. The wild plants have not been removed, but the Furze, the Broom, the Heath, and the Ferns have been left in their natural beauty, and with them have been associated Pampas Grass, Rhododendrons, and Conifers—tastefully, because irregularly and sparsely planted. So deep is one of these dells and so close to the carriage drive as almost to look dangerous, yet a feeling of security is afforded by a hedge of Larch, which has been kept to a height of about 4 feet, and is particularly cheerful by the peculiar light green of its foliage. There is a small terrace flower garden near the mansion, but extensive fancy flower gardening would be manifestly incongruous with the natural features of the place and the bold nature of the surrounding scenery. Isolated from the mansion is a newly-erected billiard room, and between the two—the mansion and billiard room—a conservatory has been erected. This is planted with Tree Ferns, Palms, Camellias, &c., and contains also many good specimens of plants in pots, and is an ornamental promenade for the family and guests.

The kitchen garden is situated some distance from the mansion, and behind a bold hill. This hill has been turned to account, both usefully and ornamentally. At the foot of the

hill is a rosery. This is fenced from the carriage drive by a Larch hedge, and is bounded by the precipitous sandstone sides of the hill. This natural wall is being covered with climbers, Clematises, Roses, Ampelopsis, &c., making it not only ornamental, but subduing the reflection of heat, and making the temperature more agreeable to both Roses and visitors. The beds of the rosery are edged by dwarf margins, a foot wide and high, of *Cotoneaster microphylla*. We leave the rosery, passing through bowers of Ivy, and by ascents of rugged steps flanked by walls of rocks, and reach a walk, the sides of which are being formed into a garden of hardy herbaceous flowers. By this charming route we gain the summit of the hill, from which the view is extensive and magnificent, reaching even to the Crystal Palace at Sydenham on a clear day. On the summit of the hill are placed water tanks of great size and substance, into which water hard and soft is forced, and which is again conveyed in pipes to all parts of the establishment, including the gardens. These tanks are nearly hidden by the Conifers, which have been planted and are growing well.

The soil of the place is a heavy mass of clayey marl, which can only be worked at favourable intervals. It is most difficult to deal with, involving much labour, and is apparently as unkind and ungenial as can be imagined, yet the trees, shrubs, and Conifers, also Rhododendrons and Azaleas, have made free and vigorous growth. In strong clay Rhododendrons are in exuberant health, looking as well but not so short-jointed as plants in peat. On the west side of this hill are bold jutting natural rocks, putting to shame all artificial imitations; and here, under overhanging boughs, a hardy fernery is to be formed, and which when completed will be one of the finest and most ornamental features of the place.

The kitchen garden is enclosed by lofty walls. The south aspect of the north wall, 300 feet in length, is covered with Peaches and Nectarines. The trees have been planted eight years, and seven crops of fruit have been gathered, each tree now yielding fifteen to twenty dozens of fruit. The trees have been planted in good soil, are protected in spring by canvas screens, and are richly fed with liquid manure in the summer months. They are treated in the same liberal manner as the trees under Mr. Luckhurst's charge, and give the same excellent results. Mr. Taylor has suggested that Sussex is not the worst of counties for Peach-growing, and I think he is right. Both the soil and climate appear to be favourable; but granting that, we cannot but acknowledge the skill of such gardeners as those whose names are mentioned in growing so quickly Peach and Nectarine trees which are characterised by great vigour and extreme fruitfulness. On the north side of the south wall Plums and Cherries are trained, and are in an excellent bearing state. Late Duke Cherry on this site is found to be especially useful, its fruit continuing until October. On the east aspects of the boundary walls are Pears and Cherries, and on the west aspects Plums and Pears. Apricots are also planted on both these aspects, but they only flourish on the eastern site where they receive the morning's sun, not thriving on the corresponding aspect where they only receive the afternoon's sun. The difference in these trees in the same garden and the same soil is very striking, and affords a useful hint worthy of being mentioned and remembered. The kitchen-garden crops, especially the Strawberries, are in a flourishing state, thanks to well and deeply-prepared soil and liberal surface-dressing of rich manure. Outside the walls a capital orchard is being established, the trees growing freely and healthily in the hard-baked soil.

The south aspect of the north wall is covered with glass, the length of the houses being 350 feet. They were erected by Mr. Gray of Chelsea, and, with their heating arrangements, give great satisfaction. Certainly they are answering their purpose well, for finer crops of fruit—Grapes and Peaches—would be difficult to find. This fine range of glass is entered by a corridor, which is devoted to the cultivation of Peaches and Figs and for the forcing of Strawberries, of which Vicomtesse Hérriot de Thury is found to be the most productive and satisfactory. Adjoining the corridor is a Peach house, containing two trees—Grosse Mignonne and Violette Hâtive, the latter being a fortnight later than the former, the two kinds thus producing a long season of fruit from the same house and under the same treatment. These trees are in a splendid state. In May the fruit was just ripening, some measuring more than 10 inches in circumference. Yet it was not thinned to a fruit to each square foot of trellis, but so close were they that I counted nine fruits on a surface of less than that in area. These trees are eight

years old, and, notwithstanding the heavy cropping to which they are subjected, they are in exuberant health. Their highly productive and admirable state is attributable to rich surface-dressings and copious supplies of liquid manure in the growing season. They are not afraid of feeding the Peach in Sussex—not afraid of luxuriant wood, not destitute of splendid fruit.

From the Peach house we step into the early vinery. The Grapes (May) were ripe, the Black Hamburgs being in an exhibition state, so fine were the berries and well were they coloured. They have been similarly forced and ripened for eight years. Another vinery is devoted to Hamburgs and Alicante, the crop being very heavy and regular; and adjoining it is a house planted with Muscat of Alexandria and Black Hamburg alternately, a splendid crop, the remaining houses being entirely occupied with Muscats, and for size, regularity, and well-set bunches this house must have a very high rank. Mr. Jenks is evidently a skilled fruit-grower. The Vines are planted inside, their roots having access to outside borders; but owing to the rich dressings and copious waterings of the inside borders the roots do not care to travel far from their feeding ground, and only a very small proportion of them are found in the outside borders. It is an instance that Vines may be prevented from rambling into ungenial soil if sufficient and suitable food is provided for them at and near the surface of the borders.

About the centre of the range the roof of a house is covered with *Maréchal Niel* and *Gloire de Dijon* Roses, which bloom profusely and afford valuable supplies of flowers at Eastertide. Roses are in great demand and are provided "all the year round."

At the other end of the range is another Peach corridor, and amongst the most useful sorts is *Belle Bance*, a vigorous tree and a free bearer of finely-coloured fruit of superior quality; the corridor also contains Tomatoes, Cape Gooseberries, &c.

Of the plant houses a few words will suffice. They are light, well-heated, span-roofed structures, devoted to the cultivation of stove and greenhouse plants, and for forcing purposes. As is the case in many other good gardens specimen-plant growing is not attempted. Plants are grown for particular places and purposes of decoration, and for affording large supplies of cut flowers throughout the year. The whole of the plants were clean and healthy and in the best state for the purposes for which they are grown.

A Cucumber house was noticeable for the extraordinary crop which the plants were producing. The sort is *Cox's Volunteer*; no other than this is grown at Brambletye, as it is found to be a free bearer, hardy, and of excellent flavour.

I have only to add that every part of the grounds and gardens was in superior order, and to remark that Mr. Larnach by the very complete garden that he has made has done much for local and general horticulture, and to hope that he will long enjoy the fruits of his liberality and see his beautiful place increase towards perfection yearly.

As to Mr. Jenks he is simply like all other able gardeners, not only courteous, but willing to impart any information that can further the advancement of the work which he practices so successfully in the hope that others similarly engaged may be equally successful.—J.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

THE wall trees require a good deal of attention at this time; not only the nailing-in of the young growths must be attended to, but since the weather has become so warm the aphid tribe has also considerably increased. The Morello Cherry trees on the north wall are annually attacked by it, but it is easily destroyed by dipping the shoots in water to which has been added soft soap and tobacco water. Instruction as to its use was given a fortnight ago.

Any wall trees on which the fruit has set very thickly should have all removed that is not wanted for a crop. It is certainly well worth all the trouble required to properly thin out fruit from such Pears as *Marie Louise*, *Van Mons Leon le Clero*, *Doyenné du Comice*, and other large sorts; the fruit is so much larger, and the total weight of fruit from a tree that has been thinned is quite as much if not more than from one that has not been so treated. Cherries are late, but *Knight's Hardy Black* and *Elton* are quite ripe, and it is necessary to protect the trees with nets to prevent the fruit from being destroyed by our feathered friends. The nets are nailed at the top and bottom of the wall moderately tight, and then forked sticks stand out from the wall, the net being caught in the fork; this tightens the net and removes it far enough from the trees, preventing the

birds pulling the Cherries through the spaces of the net. Peaches and Nectarines would seem to be a good crop on walls this year. There are also plenty of Cherries. Other kinds have set badly, and no wonder, as not only were the days and nights cold, but the sun seldom shone during the blossoming period.

The Strawberries out of doors look remarkably well and are producing plenty of runners, which are being laid into small pots as rapidly as possible. We shall have the young plants well established in small pots and ready to be planted out by the third week in July if the ground can be made ready for them. We usually plant on ground that has been cleared of a crop of early Peas. The ground is trenched and well manured, and if possible the young plants are put out in showery weather. Red spider is usually prevalent, and that is destroyed by dipping the leaves in water prepared as that to destroy aphids on fruit trees. We put the plants out 2 feet apart each way.

Vines on walls require attention at this time. We stop the lateral growths in the same way as has been recommended for those in vineries. The walls should not become too thickly crowded with growths, and some strong young wood should be trained up from the base of the Vines annually. We always find the best Grapes when the wood is frequently renewed. The best way to prevent the appearance of red spider is to syringe the Vines well daily with clear water.

Small fruits, such as Gooseberries, Currants, and Raspberries, do not receive that amount of attention they deserve during the summer months. Indeed there is seldom anything done except keeping the ground clear of weeds and gathering the fruit as it ripens or as it is required for use. But time may be usefully employed in thinning out the young wood that is not required, and stopping any shoots that may be growing too strongly. There are usually from each stool many more canes of Raspberries than are required; they may be as well thinned out now as in the autumn. In all cases just as much young wood as is required should be allowed to remain; it will be better for the wood, and the sun and air will have freer access to the fruit.

VINERIES.

The Grapes have very nearly all been out from the earliest house, and it would be well if they were all removed, as the leaves are infested with red spider, which can easily be destroyed by the free use of the syringe, which can be used when the Grapes are cleared off. The border generally has a good supply of water at the same time, to pump up the buds from which will come the fruit next year. It is a fatal mistake to allow the borders to become too dry at the time the fruit is ripe; but it is a mistake often made. The houses are neglected, and the Vines which should be maturing the young wood are suffering from want of moisture, which is needed then as much as at any other time. Plenty of air should also be admitted night and day if the wood is well matured; if not it will be as well to keep the house a little closer until the wood is ripe.

Our Vine borders are seldom disturbed by the digging fork; but those outside are rather wet and liable to crack, so we just forked over the surface to prevent cracking and to allow the air to act upon the surface soil. The later houses are doing very well, much better than the early Vines. There has been a good show of bunches, and these are large and well formed. It is only necessary now to keep the leaves free from red spider, and this must be done without the use of the syringe. As the nights are now warm we have discontinued the aid of artificial heat in the Muscat as well as Hamburgh houses.

PLANT STOVE AND ORCHID HOUSES.

Plants are now making good growth, and are encouraged by a higher moist atmosphere. A few that required repotting have been attended to. Many of the different species of Palms will continue in good health for a very long period in very small pots for the size of the plants; but the usual run of plants grown for the beauty of their foliage only require liberal treatment. If the plants are suffering for lack of nourishment the foliage is not bright and healthy, and the plants for the purpose for which they are intended are worthless. The free use of the syringe is necessary to destroy red spider, which attacks a large proportion of them.

We have put in cuttings of some of the more useful hard-wooded plants. They are struck in white sand under a bell-glass in bottom heat. Cuttings of the half-ripened wood of *Ixoras*, *Gardenias*, *Dipladenias*, &c., root very freely. The glass must be kept close for a week or two, when air must be admitted a little at first, and as it is seen that the cuttings are not likely to suffer it may be admitted more freely. Some sorts of cuttings do not root quite so freely as others, and even species of the same genus and varieties of the same species take longer and require rather different treatment. *Gardenia florida* strikes very freely; it is easier propagated than almost any other hard-wooded plant. *Ixora javanica* is easier propagated than *I. Willmarlii*, and *I. Williamsii* than *I. Colei*; but these different peculiarities are only noticed by practical experience. Some of the more rapid-growing softwooded plants are propagated annually, and the old stools are destroyed as soon as the young plants are well rooted.

Of plants of this character may be named the pretty winter-flowering *Kranthemum pulchellum*. Its deep blue flowers supply a felt want at the duldest season of the year. In marked contrast to it and flowering in January is the *Thyracanthus rutifolius*, its pendulous racemes of scarlet flowers are more than half a yard long, and are freely produced; *Aphelandras*, of which *A. aurantiaca* Boissii is one of the most beautiful—the bright orange-scarlet flowers are very striking in November and December. *Conoclinium lanthum* is another seldom-seen easily-grown plant; its large clusters of flowers remind one of a gigantic *Ageratum*. *Vincas alba* and *V. rosea* are also very free-growing plants that can be grown to a flowering size in a very little time. *Torenia asiatica* is an indispensable plant for training on trellises or for hanging baskets, and should be propagated annually to produce the strongest growths and largest flowers. *Stephanotis floribunda* has now done flowering. The young growths are trained close to the glass, where they have as much sunshine as possible. This plant may be trained quite close to the glass, and if the sun shines directly upon it the plant will flower all the better next season.

Orchids that are starting into growth should be repotted at once, there is no better time to report than this; but it is a mistake to interfere with any plants that are at rest. All *Cattleyas* that are dormant should be kept dry at the roots until they start into growth, but not so dry as to cause the pseudobulb to shrivel. Allowing the bulbs to become desiccated is not resting the plant, but laying the seeds of disease, which will ultimately be its destruction. The quantity of water a plant requires will depend much upon whether it is grown on a block, in a basket, or potted. We have here *Cattleyas* in pots that have not received water at the roots for a whole month; the reason was that they were potted in peat and sphagnum. Another plant growing on a block with nothing around the roots had to be watered daily. Other plants must be watered according to the quantity of material around the roots. It is better not to overpot; indeed blocks are safest for many of the species. *Cattleya superba* and others of smaller growth will not thrive in pots. If blocks are used care must be taken that the roots are not allowed to become too dry, else the leafy growths will become yellow, and the plant suffers.

In cool Orchid houses many of the most choice productions are making their growth, including such plants as *Mandevilla Harrisonii*, the best of all this fine genus. *Odonotopisum crispum* and many others may be daily syringed overhead when the weather is hot. It is always best when a small house with a north aspect is available for placing all the Alpine genera during the hottest of the summer months, as they suffer in a house fully exposed to the sun. The shading may be kept down all day long, but this is not so well for the health of the plants as the diffused light of a north aspect. Hardy Orchids are a very interesting class of plants, and when their requirements are known they are easily grown. For instance, those plants that are found growing naturally on dry hillsides in the southern countries of Europe must not be grown under cultivation in a shady position and the plants deluged with water; nor must the noble-growing *Lady's Slippers* of the American bogs be grown in a dry place and just kept moist. They must be shaded from the sun, and the material in which the roots are growing may be spongy like a marsh.—J. DOUGLAS.

HORTICULTURAL EXHIBITIONS.

SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held.

- TORRAT. June 29th and 30th. Mr. W. Fane Tucker, Capt., Braddon Ter. Hon. Sec.
- OXFORD (Roses). June 30th. Mr. C. B. Bidley, 115, Aldate's, Hon. Sec.
- CRYSTAL PALACE (Roses). June 30th and July 1st.
- BROOKHAM (Roses). July 1st. Rev. A. Cheales and Mr. C. Mortimer, Secs.
- MARLBOROUGH. July 1st. Mr. J. H. Edmondson, Hon. Sec.
- SOUTHPORT. July 5th. Mr. A. Campbell, Sec.
- ROYAL CALLEDONIAN HORTICULTURAL SOCIETY. July 5th and September 15th.
- OXFORD. July 5th. Mr. Alfred King, Sec.
- WESTMINSTER AQUARIUM. July 5th and 6th.
- IPSWICH.—July 6th, and September 17th. Sec., Mr. W. B. Jeffries, Henley Road, Ipswich.
- FROME (Roses). July 6th. Mr. A. R. Baily, Hon. Sec.
- NEWARK (Roses). July 6th. Mr. F. R. Dobney, Sec.
- NOTTINGHAM. July 6th to 10th. Mr. A. Kirk, Municipal Officer, Sec.
- SANDOWN PARK. July 7th and 8th. Mr. Wills, Royal Exotic Nursery, Onslow Crescent, South Kensington, Sec.
- ALEXANDRA PALACE. Roses, July 7th and 8th.
- WELLSBOROUGH. July 7th and 8th. Mr. W. B. Parks, Hon. Sec.
- REIGATE (Roses). July 8th. Mr. J. Payne, Treasurer.
- KALING, ACTON, AND HANWELL. July 11th (at Fordhook). Mr. R. Dean, Kaling, Sec.
- NEWFIELD. July 12th. Mr. J. T. Rofs, Bloomfield Nursery, Sec.
- HELENSBURGH (Roses). July 12th and 13th. Mr. J. Mitchell, Sec.
- WIMBOROUGH. July 12th and 13th. Mr. F. Appleby, 6, Linden Cottages, Hon. Sec.
- HIGHGATE. July 13th. Mr. W. M. Birk, 6, North Road, Highgate, Sec.
- WEST OF ENGLAND (HARRINGTON). Roses. July 13th. Rev. C. H. Bulmer, Gresham Hill, Sec.
- CLIFTON, BRISTOL (Roses, &c.). July 13th. Mr. J. T. Jackson, Sec.
- LEAK (Roses). July 13th. Mr. S. Cartwright, Sheep Market, Leak, Staffordshire, Hon. Sec.

KILMARNOCK. Roses, July 18th and 19th. General Exhibition, September 14th. Mr. M. Smith, 11, King Street, Sec.
TONBRIDGE. July 19th. Mr. W. Blair, Hon. Sec.
ROYAL HORTICULTURAL SOCIETY, SOUTH KENSINGTON. July 19th and 20th (Roses, &c.). November 8th (Fruit).
TRWICKSBURY. July 25th. Mr. P. Moore and Mr. H. J. O'Connell, Hon. Secs.
WARRHAM. July 25th. Mr. J. B. Shirley, Hon. Sec.
HUNTINGDON. July 26th. Mr. J. Diller, Market Place, Sec.
HADINGLEY. July 26th and 27th. Mr. T. Atkinson, Burleywood, Hadingley, Leeds, Sec.
ABRERDEN (Royal Horticultural Society). July 26th, 27th, and 28th. Mr. Archibald J. Bonnie, 183, Union Street.
BURGHOM. July 29th. Messrs. C. Jessop & E. Bawneley, Hon. Secs.
SALEHAM. July 29th. Mr. G. A. White, Hon. Sec.

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

ADDRESSES (G. E. C.).—The depot of the "Flower Mission," is Wilberforce Mission House, The Paragon, New Kent Road, London.

POET HAMPER.—"O. E. G." asks if anyone can tell where those little post hampers that are used for conveying fruit, &c., through the post can be procured.

FANCY PANSIES (E. M.).—The flowers sent are very effective, the colours rich velvety purple surrounded with bright yellow, producing a gay appearance. The flowers are also good in shape, and as you say they are freely produced and the plants have healthy foliage, the varieties are well worthy of preservation and culture.

TURKISH BATH (A Subscriber).—We never heard of a Turkish bath being heated by hot water, and we very much doubt if you would get the required temperature from the boiler which heats the conservatory. You had better consult a practical heating engineer.

PEACH LEAVES EATEN (D. M.).—We cannot tell what it is that has eaten your Fuchsia and Peach leaves unless you can send us a specimen of the destroyer. If you will do so we will give you the information. Spraying with a solution of soft soap may probably be of benefit, and it cannot do any harm.

GRAPES BOILED (Somerset).—We advise you to keep the house somewhat cooler, giving more and earlier ventilation, especially at the warmest end of the house. Do not close the house entirely at night. The atmosphere being too close and warm is, we think, the cause of the injury of which you complain, and especially as you say it only occurs at the warmest end of the house.

FRUITS FROM SEED (E. W. G.).—It is impossible to answer your questions without knowing whether your Fruits are tender or hardy. If you will send that information, and, if possible, the names of those you desire to raise from seed, we will endeavour to give you the information you require.

BAFWOOLGUES IN GREENHOUSES (Sussex).—We fear you would not succeed in growing *Bauhinias* in deep boxes in your greenhouse unless the structure is very light and kept cool during the spring months. You might grow them in the boxes in solid frames until the flowers show colour, then remove them to the greenhouse to enjoy their beauty.

INSUFFICIENT HEAT IN GREENHOUSE (Fife).—With a fire along the front and both ends you ought without the aid of lamps to exclude frost. Either the fire is too limited in surface, or the furnace too small. A paraffin lamp would assist, but not be sufficient to keep out a slight frost. The paraffin would not injure the plants only by consuming and drying the air. It is also a more costly mode of heating than with coal. We should increase the size of the fire, and probably the furnace, but in the absence of particulars we cannot advise.

PRUNING GOOSEBERRY BUSHES (E. F. C.).—You may cut all the young shoots to within an inch or two of their origin, except the leaders, and those you may shorten to the extent they would be at the winter pruning, leaving shoots as required at the desired distances and positions if increase or extension be desired. This will admit air and light with access to the fruit for picking.

CORN SALAD FOR WINTER USE (J. T., North of Ireland).—Sow the seed about the middle of August in a border of light rich soil, in shallow drills 6 inches apart, distributing the seed rather thickly; and sow for succession the early part of September, three weeks to a month after the first sowing. Keep clear of weeds, and select an open but warm border. Water if dry. In winter the outer leaves only should be gathered.

GRAPES MILDEWED (A Constant Subscriber).—The berries and leaves sent us are infected with mildew. Dust all the parts showing the "white down" with flowers of sulphur, and ventilate more freely.

GOLDEN FEATHER FOR AUTUMN PLANTING (An Amateur Gardener).—The seed should be sown the first fortnight of July in pans, and placed in a cold frame, slightly shaded, and kept moist. When the seedlings appear admit air freely, and when large enough to handle prick-off 2 inches apart in good, rich, light soil in the open border, shading from bright sun until established.

WINTERING CONVOLVULUS MAURITANICUS AND NIPEREMERGIA GRACILIS (Idem).—The plants are best wintered from cuttings struck in summer, in a cold frame or under a hand-light, kept shaded, having the plants established in pots before autumn. They require to be potted in sandy loam with a little peat and a free admixture of sand, and to be kept rather dry during the winter, yet the health of the plants must be maintained by water as required. Old plants may be preserved by taking-up before frost, potting in poor light soil. They should be kept in a greenhouse safe from frost.

PLANTS FOR OUT FLOWERS (Stephanotis).—Store plants.—*Stephanotis floribunda*, **Gardenia florida*, **G. florida intermedia*, **G. Fortunei*, **G. radicans major*, **Ixora cuneata*, **I. Colei*, **I. amabilis*, **I. javanica floribunda*, **I. odorata*, **Allamanda grandiflora*, **A. Hendersoni*, **A. nobilis*, **Amaryllis* in variety, **Anthurium Schottianum* and var. album, **Boo gainvillea glabra*,

Burchellia capensis*, **Clerodendron Balfouri*, **Conoclinium lanthimum*, **Dalechampia Roemeriana*, **Epiphyllum truncatum* var., **Echearia amsonia*, **E. candida*, **Euphorbia splendens*, **E. joachimiflora*, **Pancratium fragrans*, **Pentas kermesina*, **Poinsettia pulcherrima* and var. alba and major, **Nigella gratissima*, **Rondeletia speciosa major*, **Tuberanthea coronaria flore-pleno*, **T. camassa*, and **Toxiophila spectabilis*. *Greenhouse plants*—Abutilon Boule de Neige*, **Aponogeon distachyon* (an aquatic), **Bonvardia in variety*, **Camelia* var., **Carnation tree* var., **Cineraria*, **Cyclamen persicum* var., **Daphne Fortunei*, **D. indica alba* and rubra, **Dasycodon gracilis*, **Episcia*, **Eriosea*, **Habrochamnium aurantiacum*, **H. fasciculare*, **Heliotropium* var., **Hoya carnea*, **Hydangea paniculata grandiflora*, **Imanophyllum minimum*, **Lilium* var., **Loesia gratissima*, **Mandevilla suaveolens*, **Myrtles*, **Pimelea decussata*, **P. spectabilis* roses, **Plumbago capensis*, **Double Chinese Primulas*, **Rhododendron fragrantissimum*, **R. jasmiflorum*, **R. Princess Alexandra*, **Rhynchospermum jasmoides*, and **Scilla* protusa; **Indian Aloxias* are good but require gumming, and the same remark applies to *Palagotum*—show, spotted, and *Zonal*. The double early wall without gumming. *Calla* (Elephant) *ethiopica* is also good, and you will need forced plants as **Hotela japonica*, **Kalmia latifolia*, **Pinks*, **Viburnum opulus*, **Roses*, **Dentula gracilis* (to be cut before expanded), **D. areata flore-pleno*, **Fraxinus sinensis alba flore-pleno*, **Rhododendron*, **Lily of the Valley*, **Lilium*, particularly white; **Ghent Anzies*, with **Clematis* as Miss Bateman, **Albert Victor*, &c., all of which are indispensable outdoors, along with **Magnolia*, and **Roman Hyacinths* (indoor), double *Tuberose* (indoor), **Narcissus* (Polyanthus), **Double White* (postious), and single var. *Hardy plants*—**Allium fragrans*, **Anthericum Liliastrum*, **Campanula aggregata*, **O. calidifolia*, **Ocheanthus* (Wallflowers), var., **Daphne Genkwa*, **Delphinium* var., **Carnations* and **Paeonies*, **Helleborus* var., **Lathyrus grandiflorus*, **L. latifolius*, **Lilium* var., **Mycotis distiflora*, **Narcissus* var., **Paeonia* var., **Phlox* var., **Primula cortusoides*, **P. acaulis double* var., **Pyrethrum double* var., **Ranunculus amplexicaulis*, and **double* var., **Schizostylis coccinea*, **Spiraea filipendula plena*, **S. palmata*, **Statice latifolia*, **Triton*, **aurora*, **Trillium europaeum*, and **Viola* var. *Anaële* or *Bianca*—**Ageratum odoratum*, **A. Imperial Dwarf*, **Aster Dwarf Bouquet*, **Centaurea cyanus major*, **Chrysanthemum carinatum*, **Dunnetii flore-pleno*, **Dianthus chinensis Hedderigi flore-pleno* var., **Sweet Pea* var., **Phlox Drummondii* var., **Scabious dwarf double* var., **Stocks* var., **Sweet Sultan* var. We have marked some of the best and most enduring with an asterisk. For pecking nothing answers so well as a tin box not more than 4 inches deep, and if greater depth be wanted trays may be introduced so as to apportion the box into compartments of 8 to 4-inch depth, the divisions being secured by loose slide pins fitting into sockets at the sides of the box. Ours are of two sizes, with two and three trays respectively, having three and four compartments. Wood boxes answer well about 4 inches deep, with the lids screwed down. The flowers ought to be cut when at their best, or if anything a little before. All flowers should be cut in the early part of the day, when cool, and before exposure to the sun. Flowers ought also to be cut dry. If of a kind that requires gumming they should have the stems placed in water after gumming, and left for the gum to dry, as it will in an hour or so. If the flowers are small bunch them small, and do not crowd in the bunch, tying loosely. At the bottom of the box place a sheet of thick brown paper and well damped, but not in the box, draining before it is placed therein. Around the stalk of each flower or bunch wrap a piece of cotton wool dipped in water and wrung "dry"—that is, all the water squeezed out as a sponge. Lay in the box carefully, placing closely but not very tightly, separating and surrounding each flower with tissue paper, and upon the flowers place cotton wool the downy side towards them, the glazed of course uppermost. We usually, however, remove the glazed side, which comes off on highly glazed wedding like a skin, and use the soft part only. Care must be taken not to allow the cotton to come in contact with the flowers, but be separated from them by tissue paper. Dry wool in contact with the flowers abstracts the moisture from them, and wet wool damages them, spoiling their colours. *Liliums* ought to have the anthers removed as the pollen sheds and discolours the petals, and all flowers as a rule are more enduring when the pistils and stamens are removed.

EVAPORATING TROUGH IN VINEY (Amateur).—The troughs ought to remain filled with water not only until the Grapes begin to show signs of colouring, but until they are fully coloured, when the troughs should be allowed to dry, moisture in the atmosphere after the Grapes are ripe being inimical to their keeping. The application of liquid manure composed of cow dung and soot is good. Continue it until colouring, and about that time you may give a good application. It will materially assist the swelling of the berries.

GATHERING CITRONS FOR PRESERVING (Idem).—Take them when full-sized, just when commencing ripening, and whilst green.

VALUE OF POTATOES (T. J. B.).—It is impossible to answer your questions, as crops vary so much in value and markets in price. Dig a yard and weigh the produce, and you will then be able to determine the value of the crop by a little calculation.

SOWING PERENNIALS (Beeston).—You may sow seeds of most perennial plants now, encouraging germination and rapid growth by having the soil rich, and light, and kept regularly moist. Pansy and Polyanthus seed should be sown in a shaded place.

COTTON SEEDS (Mrs. D.).—Sow them in light sandy soil—peat and loam—and place in a heated structure, keeping regularly moist. When the seedlings are large enough they may be potted in the same kind of soil, and be kept in heat until established in the pots, then removing them to a cooler house.

RED SPIDER ON VINES (C. B.).—As your Grapes are ripe and the red spider so numerous as to endanger the permanent welfare of the Vines, you must destroy the spider even if you to some extent mar the appearance of the Grapes. We should syringe the Vines violently, placing the nozzle of the syringe between the bunches. No doubt the falling water would to some extent wash the bloom off the berries, but it would not be serious if the work was carefully done; but better a few bright berries this year than no crop next.

INSECTS (C. B.).—It is difficult to determine, owing to their condition being so unrecognisable, whether the insect is an aphid or a psylla. They may be destroyed by fumigating with tobacco or syringing the plants with warm water in which 2 ozs. of soft soap has been dissolved to each gallon of water, adding to the solution a pint of tobacco water.

NAMES OF PLANTS (A. B. G.).—It is *Staphylea pinnata* or Bladder-nut tree, a shrub growing wild in many parts of England. The nuts, in some parts of Europe, are strung for beads by the Roman Catholics. The kernels taste

like those of the *Pistacia*, and are eaten in Germany by children. The flowers contain a great deal of honey, and are very attractive to bees. The plant is increased by side suckers, by cuttings put in during the month of September, or by seeds, which are ripened in abundance. The seeds ought to be sown as soon as they are ripe; because, as they contain an oil, they very soon become rancid. They will come up the following June, with two large, lance-shaped, axinal leaves; though sometimes they do not come up for two years. (O. E.).—You ought to have sent leaves also. (W. E.).—The white flower is *Chrysanthemum Leucanthemum*. Send a flower of the *Viola*; it is like *V. tricolor*. (E. A. Holmes).—1, *Rosa rubella*; 2, *Taxella cordifolia*; 3, *Veronica repens*; D.C.; 4, *Saxifraga elatior*; 5, *Saxifraga ceratophylla*; 6, *Saxifraga hirta*; 7, *Veronica*, specimen too incomplete; 8, *Veronica gentianoides*. (Somerset).—*Listera ovata*. (J. L., Nottingham).—The white flower is *Omphalodes linifolia*, and the other *Veronica polita*. (E. H. Burge).—*Asphodelus ramosus*. (R. L. Dashwood).—*Scilla peruviana*. (Sussex).—*Polypodium Phymatodes* or a near ally. (S. H. H.).—1, *Lygodium japonicum*; 2, *Pteris tremula*; 3, *Pteris cretica*; 4, *Aspidium falcatum*.

POULTRY, BEE, AND PIGEON CHRONICLE.

LES BASSES-COURS D'ANGLETERRE.

CHAPTER VII.—EARLY WOOD.

We hardly know where to begin, for we feel we can never say too much in praise of the beauty or the excellence of Mr. Cresswell's yards and birds. Whether we go to Ascot station and

connected with them, and around which we could linger for a long time—some plant picked on some inaccessible-to-most-people Swiss mountain top, or a cactus which has grown from a slip picked in some fair Italian garden and brought home in a hatbox. There are many things which we should delight to tell of, but we feel that "basse-cour" is only French for poultry-yard and not for pleasant matters generally, and so we will try to describe the yards and birds in this immense establishment.

Well, to try and begin once more, as we drive under the avenue of limes, which nearly meet overhead though still quite in a state of youth, we see to the right a field containing perhaps seven or eight acres, and round the sides we see houses, some standing in enclosed wire yards, and some not; and then as we get farther up the drive we catch the first full view of the establishment, and that view we give in the sketch which accompanies this chapter. A sweetly pretty peep is this of the best corner in the field, for there in the front is one of the ranges of runs, and at the right side is the Turkey and Goat house, and on the left is another habitation, while the chimneys of the house itself are just seen through the firs; behind are the stable and Pigeon houses, and in front of the range of houses is the principal cooping ground. We can only say, excellent though the sketch is, it in no way gives the beauty of the place its proper due, for a more charming spot it is impossible to imagine for a poultry-yard. We must state here that the

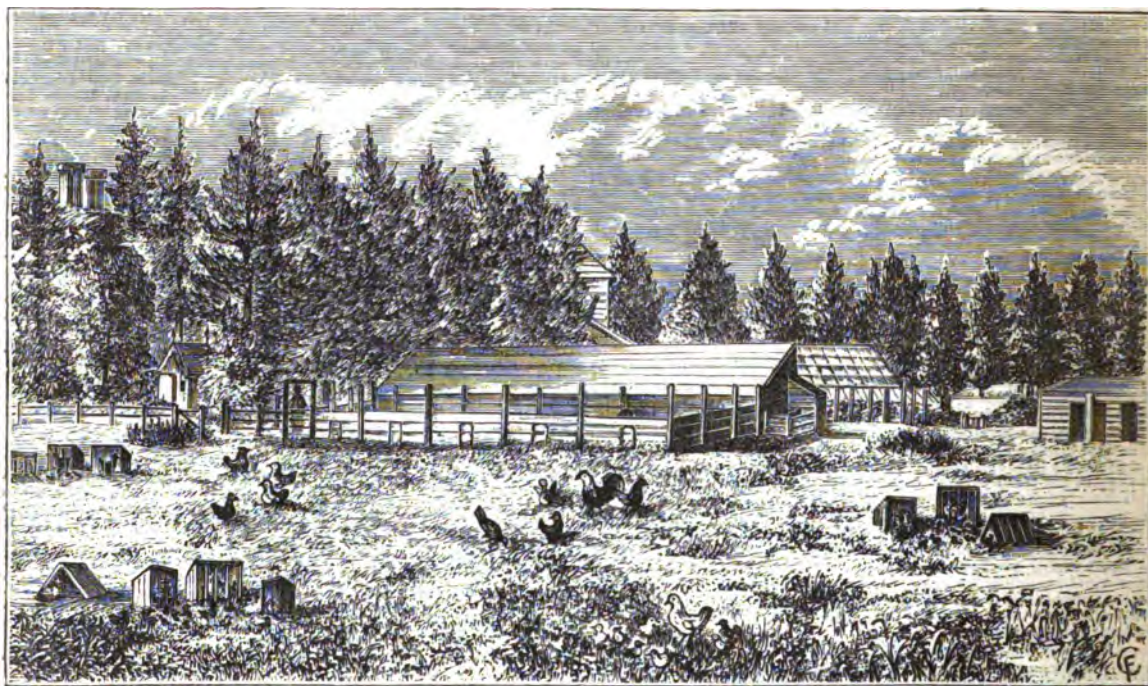


Fig. 129.—MR. CRESSWELL'S POULTRY ESTABLISHMENT.

walk the two miles over that open beath land with all the picturesque villas nestling on the hill sides among the pine trees; or whether we come from Farnborough station and drive along that seven miles of road through the old village town of Bagshot and past the Penny Hill estate, so famed for its Wellingtonias and Rhododendrons; or whether we go to Sunningdale station and skirt the famous "Noble" nurseries, which make us long for some of the specimen shrubs there growing—whichever way we approach there is something to see, and each road possesses individual charms. But leaving public thoroughfares and external objects of interest, let us pass through the gates which lead us to the home of the celebrated Dorkings—Coloured, White, and Silver-Grey.

Everyone who frequents our poultry shows knows Mr. Cresswell, and very many other poultry fanciers as well who have never been inside the doors of an exhibition; and all who know him, whether personally or by correspondence, know him to be as upright and enthusiastic a fancier as ever owned a bird, and so this short account of his birds and yards will be read, we think, eagerly by all. As we said before, we hardly know where to begin, for apart from the live stock, which is so peculiarly interesting to us, there are rare specimen conifers and shrubs we should like to tell of, and also well-grown and well-shaped ornamental trees as may seldom be elsewhere seen, all growing together in luxuriant healthiness; and then in the greenhouses there are plants which have a little history, many of them,

illustration was very kindly drawn for us on wood by Miss Cresswell, who is one of those lady fanciers we think so highly of, for in the absence of Mr. Cresswell she is indefatigable for the good cause, and is able in the case of an emergency, which at times will come upon every large establishment, to know just what to do for the best. Such a person is invaluable, and we often think some of the great Early Wood winners owe a portion of their health, or size, or condition to Miss Cresswell as much as to her brother. In bird portraiture this lady, too, is a rival of Mr. Ludlow's, and no mean one either, for some of the birds which she copied from life in water colours at the late Crystal Palace Show are simply admirable.

In the block of runs facing us in the illustration are five compartments, and we found in them White Dorkings, Coloured Dorkings, and Black Rose-combed Bantams. The latter are of Mr. Cambridge's strain, and, although perhaps a trifle too large, are exquisite in colour and shape. The cock running with the hens was the bird first at the Bath and West of England meeting at Croydon, and a little beauty he is. The Coloured Dorkings were very good, and Mr. Cresswell seems paying as much attention to them this season as to his famed White and Silver-Greys. We should suppose there was no establishment in the kingdom where so many Dorkings, especially Silver-Greys and Whites, possessing so much quality belonged to one gentleman. Behind this row of houses is a smooth lawn, and to the left of that a large run enclosed by wire-netting taking in the

whole of a little hazel copse, and here the White Dorkings are allowed to run for shade. The lawn was so beautifully kept that it looked a paradise for Cochins, for there was nothing to damage the longest foot-feathering.

Passing through this yard we come to the Pigeons, and we could stay here an hour, for a more charming sight it is a difficulty to imagine, for there at a whistle come out into the open yard Turbits of all colours—peak-headed, crown-headed, and plain-headed; Turbits blue, Turbits red, Turbits yellow, Turbits black—each one with a list of winnings, each one seeming more elegant in shape and more beautiful in beak and rose than the last; and among them are Fantails of rare excellence, and Archangels with the best sheen all over them, taking them as a lot, as we have seen for a long time; and then there is a Turbit-teen or two, and a few more Toys. Altogether it was a lovely sight. Each department alone was worth a visit; the specimen conifers and American shrubs, the poultry, and the Pigeons. We were never tired of passing from tree to tree and yard to yard. In the front of the stable is another lawn, and by its side another little wood; this is the baby nursery. Here the chicks are cared for till three or four weeks old, when they are drafted-off to the heathland in front of the range in the illustration to make room for younger broods. We must pass over the furniture of the poultry room and the pens put up there, and the basket store, and come to the best lot of runs on the place. We go through a wicket-gate and we find ourselves in an orchard entirely divided up into runs, and they are about the best in most ways we ever saw. They are boarded-up 4 feet high with wire on the top, and planted against the wire are flowering creepers and rose trees in pots. In each yard there were five or six fruit trees with low branches affording admirable shade, and in each yard there was a moveable poultry house. The runs were all laid down with closely-cut grass, and looked as perfect places for prize poultry as can well be imagined. These runs form a quadrangle, and the sides being boarded-up 4 feet high the space in the centre is entirely free from draughts and cold winds, and would make a glorious place for a January brood. In these runs we found the champion Silver-Greys (hens and cocks), heroes and heroines over and over again, and birds which since we saw them have performed the unprecedented act of taking both the cups at the late Hereford Show against the Coloured variety. Every bird had a history, every bird was the father or mother of some well-known winner. And then there were Silkies here, and among them a bird really Japanese, direct from Japan, with all the required points; and then there were here the early Dorking cockerels, growing away and doing well, and looking ready to keep up their owner's reputation. Leaving here we pass more coops of young stock on another lawn, and all the early pullets. Here too were Hamburgs (Golden-pencilled), Silkies, Black Bantams, and Nankins; and then we come to a serpentine walk, at the end of which we find another nursery, and the adult Golden-pencilled Hamburgs, some of which were peculiarly clear in pencilling, and with fine natural combs. By this time we had been well nigh over the whole establishment, only we went so slowly and had so many objects of interest to look at at every turn that we were quite sorry when we had seen them all, and did not think we could do better than begin again and go over the whole place once more from the beginning, which we accordingly did.

This, then, is a tiny sketch of the Early Wood yards. We have done no sort of justice to anything. We have not described individual birds, for they are all well known. We have not told of the little flock of Goats, or the Turkeys or the Ducks, or of the various kinds of coops, or of the beautiful cleanliness, or of all the little methodical arrangements, because we have no space. We cannot think there can be 7 or 8 acres anywhere else so full of interest to a poultry and Pigeon fancier, and we cannot do otherwise than recommend everyone who has the chance to make an arrangement with Mr. Cresswell to go over his yards, for that they will be simply repaid we know, that they will find a hearty welcome we feel sure, that they will come away edified we are positive. We must not forget to mention that Mr. Cresswell's poultry manager is Mr. Albert Clarke, a young man in whom we take the greatest interest, for he was trained by us and lived with us over three years, and we were pleased to pass on such a well-disposed and industrious person to undertake the charge of the famous Early Wood birds. As we said we feel we have not done justice to a single breed which Mr. Cresswell keeps, more especially to his White Dorkings, which are something quite beautiful to see feeding together; but to describe fully a yard of this size, which contains so many specimens of so many varieties, would fill up pretty much all the pages of one number of "our Journal."—W.

POULTRY AND BEE NEWS AND QUERIES.

MR. E. K. KANSLAKE's account of the cock Pheasant nursing the chicks at the Zoological Gardens reminds me of a Golden cock Pheasant, now dead, which drove his mate off her nest and insisted himself on sitting on the eggs, which he did most

closely for weeks, but none of the eggs hatched out. I have a Brahma cock which always delights in enticing the young broods of chickens away from the hen, and collecting them under himself, and tending them and breaking up their food with all the care of the mother.—E. H. M., *West Isley*.

"R. S." asks if "STAINES" will detail the method of giving pollen to bees by means of a skep with shavings as referred to in the last number of the Journal.

PORTSMOUTH POULTRY SHOW.

To one who knew Portsmouth twenty years since and had never seen it until this year, as was the case with me, the improvement in the town is wonderful. It looks as if Baron Haussman, the renovator of Paris, had come to Portsmouth and carried on his calling there. The town is so cleared of the dirty and close streets, and all is so open, and clear, and clean, with here and there trees planted, that it is a pleasant place to look at and stay in, so different to what it was formerly.

I find the Show (which resembled in miniature the Bath and West of England without the machinery) in a grass square just off High Street, in a place called the Governor's Green. On one side is the Garrison chapel, while the dome of the church in which lies buried the Duke of Buckingham of Charles I.'s time, who was assassinated close by, comes in view. Within the square, used I fancy as a drill ground, are cannon here and there—curious adjuncts to a show of Doves and domestic birds and animals.

Entering I go straight across to a large circular tent of enormous proportions; I stepped in and found it 40 yards in diameter. An officer near me said it resembled the tent of the Governor-General of India. This splendid tent was lent by some great official near, transported it could not be, for the lofty mast in the centre forbade locomotion. Never were birds so splendidly housed. The poultry pens (two tiers) were arranged round. Mr. Billet told me he found it somewhat difficult in forming his square pens in a circle, but it was done and well done. The Pigeon pens ran across, while on a large open space near the centre pole, flag-adorned, were roomy enclosures for the Peafowl and Pheasants. When I remembered how often my hat had been endangered by low tents it was pleasant indeed to look upward into that lofty canvas dome, and on that ground where a regiment of soldiers might repose. I need not tell poultry readers that it is a bad time for exhibition, that the birds are not in the hard feather of winter; but still, such is the skill of exhibitors, that as a rule their pets did look wonderfully well.

The Game classes headed the list. They were not large; indeed, in one class, Brown-breasted Red hens, there was no entry. The first Black-breasted Red hen was a remarkably pleasing bird, very choice and tight, and carrying no lumber. The entry of Piles was good, but the Duckwing prize hens were the choicest. The dear old fatherly and motherly-looking Buff Cochins had large classes, and quite half were good birds; still, these were beaten by the Whites. The first hen (Capt. Talbot's) was admirably shown, and a highly commended of Mr. Woodgate's might have had a very highly commended. The Dark Brahmas had specially large classes. The first-and-oup cock (Mr. Lingwood's bird) eclipsed all. The Brahma hens had no cards, though eight were their due. I asked an attendant where they were, he told me the hens had eaten them, and singularly only the hens in this class and another class had done so. "Ah! how mischievous girls are!" or was it to prevent jealousy? "Now, dears, we are all alike, so no bad feelings." In this the county of Light Brahmas the birds were not equal to what I looked for, though the first cock was most excellent. Among the Dorkings the second (Mr. Burnell's) was a grand bird, but as a rule the hens were the best. I was extremely pleased to see the Silver-Greys were so numerous, and the hens of this variety were particularly good. They were large and well marked, and the beauty of these birds is so much greater than their darker sisters; indeed, they look fancy fowls. The Spanish, of course, were but few—few but good, and the first hen (Miss E. Browne's) was such a bird as is rarely seen. Hamburgs were, as to the Pencilled, in no way remarkable; but the Spangled made up for it. First Silver-spangled cock a very beautiful bird but delicate-looking, and the third also excellent. The hen spangled still better. *Polands* only six pens, so every bird won. The French classes were well filled, also the Any variety. In the latter, for cocks, a fine Andalusian was first, and a thoroughly good Black Hamburg second, and another Black Hamburg fourth. This class of cocks was throughout deserving. The hens, save the winners, were not so meritorious. First Mr. Woodgate's Silky, a neat, nice, good bird—certainly the best in the class. The Selling classes were extremely large.

Ducks only a few. Rouens first (Mr. Ogilvie's), second Aylesbury (Mr. Staples); while Mrs. Dressing's noted prize pair of Rouens were not noticed. Such is the fate of war and—Ducks.

Now for the little Bantams. These, save the Black Reds, were almost non-existent. Among the Black Reds the first cock was

effect whatever, and the system may be expected to work well with such; but in any case the greatest danger is that the attention of a judge may be drawn away from the main point—viz., the quality of the birds; mistakes will be the consequence. In the present case the awards were made before referring to the names.

Spanish head the list with the Thorne winners in the same position, these being two pens such as have not been surpassed of late years. **Dorkings**, White a good class, and the winners large. **Dorkings** Dark good, but the best pen lost, as the cock's comb laid quite flat on his face. **Cochins** Buff, the winners splendid, as also the first-prize Whites; the second (Partridge) a nice pair. **Brahmas**.—Darks won both prizes. A fair class. **Red Game** pairs first; **Brown Reds**, which we think we have seen further south, good in all points, second. **Black Reds** a good pair, the hen very gamey in shape. **Game**, any other, winners (Duckwings) of fair quality. The Oley cup-winner, which outdistanced all others, was sent singly by mistake. Single cock first **Brown Red**, we believe the Morpeth cup-winner; second **Black**, good but rather large; very highly commended a **Black Red** stag, by far the best, but out of feather. **Hamburgs** good classes, and the Gold-spangles a close one. Most of the **Silver-spangles** also noticed, and very good. Many of the **Gold-pencilled** hens were much faded, but as a rule the cocks were in good order. **Silver-pencilled** winners very good, but the rest only poor. **French**.—First a large good pair of **Houdans**; second and third **Ortens**. **Polish**.—First **Gold** and second **Silvers**. **Game Bantams** a large class. First a pair of **Black Red**, almost faultless; second **Black Reds**, also good and smaller, but hen not equal to first. **Variety of Bantams** Blacks won, and these were very good. In **Bantam** cocks first was a real good **Black Red**, small and in nice bloom; second a **Brown Red**, good in eye and colour. **Extra class**.—First **Black Hamburgs**, the best ever yet seen; second very good **Malays**, but falling a little out of feather. **Selling class**.—First **Spanish** and second **Buff Cochins**, both very good pens in every respect, and cheap. Unfortunately several pens were empty, as we often find the case at this time of year, when birds are changing their plumage.

Some of the classes of **Pigeons** were weak, while others were well filled; most of them being in pairs had no doubt an effect on the entries. **Carriers** (cocks) a fair lot. First a **Black**, very good in beak and eye-wattle; second **Dun**, also good; third a **Dun**. **Hens**.—First a **Black**, a new come-out, and very good in all respects; second and third also **Black**. **Pouter** cocks.—First and second **Blues**, and third **White**, all good birds. **Hens**.—First **Black**, in nice trim; second and third **Blue**. **Almond Tumblers** (Short-faces) only one pair. **Long-faces** poor; in fact, we never yet could appreciate the **Long-faced Almond**. Any other, first **Agate**, and second **Bald**. **Barbs** a large class; first a grand **Yellow** hen, second and third **Blacks**, and well placed. **Foreign Owls** were very good, and all **Whites**. **English Owls**.—First a capital **Blue**, second a well-known **Silver**, and third a **Silver**, a little coarse. **Trumpeters**, all **English**. **Dragoons** had two classes, **Blue** winning in the first and **Yellows** in the second. **Jacobins** were very good in both classes, the **Red** or **Yellow** a large entry. First in the latter class a grand pair of **Reds**. Any other were—first **Whites** and second **Blacks**. **Antwerps** were three good classes; the **Short** and **Medium-faced** were very good. A **Flying** class was provided on a capital system, the first bird doing his seventy-five miles in 115 minutes, second in 117 minutes, and third in 136 minutes.

Rabbits had but two classes, the first and plate going to a **Black-and-white** doe in **Lops**, 22 by 44; the second a **Sooty Fawn** doe, 22 by 44, not in as good condition; third a **Black-and-white** doe, 21 by 44. In the **Variety** class a good **Silver-Grey** was first, **Himalayan** second, and **Belgian Hare** third.

POULTRY.—**SPANISH**.—1, H. Beldon. 2, J. Thresh. 3, H. Dale. **DORKINGS**.—**White**.—1 and 2, T. Morritt. Any other colour.—1, C. Wides. 2, A. Jackson. **COCHINS**.—**Ottoman** or **Buff**.—1 and 2, G. H. Proctor. Any other variety.—1, G. H. Proctor. 2, B. Marshall. **BRAHMAS**.—**Poona**.—1, G. H. Ball. 2, N. E. R. Moor. **GAME**.—**Ember**.—**Brown**.—1, C. Wensley. 2, W. H. Oliver. 3, C. E. Morgan. Any other variety.—1, G. Holmes. 2, T. Potts. Any variety. **COCK**.—1, G. Holmes. 2, J. Nelson. 3, C. E. Morgan. **HAMBURG**.—**Golden-spangled**.—1, G. Holmes. 2 and 3, H. Beldon. **Silver-spangled**.—1, H. Beldon. 2, J. Ashworth. **Golden-pencilled**.—1, H. Beldon. 2, T. & C. Kidson. **Silver-pencilled**.—1 and 2, H. Beldon. **FARNCH**.—1, J. M. D. Smith. 2, B. Myers. **POLISH**.—1, H. Beldon. 2, A. & W. H. Silverster. **BANTAMS**.—**Game**.—1, W. F. Entwistle. 2, J. Nelson. Any variety. **Red**.—1, H. Ashton. 2, G. Holmes. 3, J. Peacock. Any variety. **Cock**.—1 and 2, J. Nelson. 3, W. F. Entwistle. Any other variety. **Long-faced**.—1 and 2, H. Beldon. 3, B. Hawkins (Malay). **SELLING CLASS**.—1, J. Powell. 2, Miss Cotes (Buff Cochins).

PIGEONS.—**CARRIERS**.—**Cock**.—1, H. Yardley. 2, H. A. Ayton. 3, G. Farlong. **Hen**.—1, H. Yardley. 2, W. G. Harrison. 3, T. C. Taylor. **POUTERS**.—**Cock**.—1 and 2, R. Blacklock. 3, G. Holmes. **Hen**.—1 and 2, R. Blacklock. 3, T. C. Taylor. **EMBERS**.—**Black**.—1, W. G. Moly. 2 and 3, H. Woods. **JACOBINS**.—**Red**.—1, G. Alderson. 2, H. H. Cooch. 3, T. C. Taylor. **Long-faced Almond**.—**Cock** or **Hen**.—1, H. Yardley. 2, T. C. Taylor. 3, J. Pearson. Any other variety. **Cock** or **Hen**.—1, H. Yardley. 2, R. Woods. **BARBS**.—**Cock** or **Hen**.—1, H. Yardley. 2, J. Thresh. 3, W. Bulmer. **OWLS**.—**Foreign**.—**Cock** or **Hen**.—1, 2, and 3, G. Anderson. **English**.—**Cock** or **Hen**.—1, J. Thresh. 2, R. Woods. 3, J. Young. **TRUMPETERS**.—1 and 2, F. N. Barnard. 3, W. G. Duck. **DRAOONS**.—**Blue** or **Silver**.—1, R. Woods. 2, W. Smith. 3, H. Jennings. 4, W. G. Harrison. Any other variety.—1, W. G. Moly. 2 and 3, R. Woods. **JACOBINS**.—**Red**.—1, G. Alderson. 2, H. H. Cooch. 3, T. C. Taylor. Any other variety.—1, J. Young. 2, T. S. Stephenson. **FANTAILS**.—1, O. F. Cockhill. 2 and 3, J. F. Loversidge. **NEWS**.—1, R. Woods. 2 and 3, J. Young. **TURBATS**.—**Red** or **Yellow**.—1 and 2, G. H. Pickering. 3, T. S. Stephenson. Any other variety.—1, G. Alderson. 2, J. Davidson. **ANTWERPS**.—**Short-faced**.—1 and

2, W. F. Entwistle. 3, H. Yardley. **Long-faced**.—1 and 2, H. Jennings. 3, J. Raper. **Medium-faced**.—1 and 2, W. F. Entwistle. 3, H. Jennings. **SELLING CLASS**.—**Price not to exceed 50s.**.—1, O. F. Cockhill. 2, W. Chappelow. 3, P. D. Henderson. **Price not to exceed 50s.**.—1, A. Graham. 2, P. D. Henderson. 3, J. Muskhell. **FLYING**.—**Local Class**.—1, T. Richardson. 2, J. Acon. **RABBITS**.—**Long-eared**.—**Black** or **Doe**.—1, J. S. Robinson. 2, M. Borradaile. Any other variety. **Black** or **Doe**.—1, A. Hudson. 2, W. Bulmer. 3, J. S. Robinson.

JUDGES.—Mr. H. Hutton and Mr. S. Hawley.

MORTALITY OF CANARIES WHEN WEANED—CAUSE AND EFFECT.

In reply to Mr. G. Andrews, I may remark the causes of death occurring may, even to the most experienced, appear at times unaccountable.

Without possessing any further knowledge of the birds than the letter conveys is like feeling one's way in the dark to attempt to arrive at any direct cause as to the deaths of the Canaries. No doubt they have all met with their deaths with one complaint, for in speaking of the birds it is stated they appear "stupid," and "go off in a fit and die." In the first place, I may ask, Was the repensed supplied to the birds of the large black kind, and given to them in the crushed state without the seed having been previously thoroughly scalded? If so, the diet was far too powerful for old, let alone young birds. The spasmodic attacks suggest that food of some kind has been administered which disagreed with the internal organs.

Young birds require food of a simple kind, otherwise the system becomes injured. In some cases the constitution is better able to battle with unfit food than in others. It does not follow that because some of the same repensed has been given to the old birds to feed their young with daily that it should likewise be given to the young broods when they are able to feed themselves, for it must be understood that the food after becoming macerated in the crops of the old birds is prepared for their offspring, which is not the case when the young have to eat the food in its natural state. The same remarks apply to green food, the various constituents of some of which may be comparatively harmless when supplied to the young from the parent's crops than when partaken of in its crude state by young birds able to feed themselves.

The young broods when weaned from the old birds would be better placed in a cage entirely away, otherwise fretfulness is encouraged, which it is well to avoid. A wire partition will do for a day or so when the young are first separated, so that the old birds can feed them through the wires. Another advantage accrues from removing the birds from the locality of the breeding place. It is well known by many breeders that vermin, especially at this period of the season, increases beyond all calculation, and finds means of sustenance by robbing and sucking from their victims the blood that should assist in keeping the birds vigorous; and this, too, being done mainly at roosting time, likewise prevents the birds having their proper rest. The effect is a weakness and a less liability to stand either a rich or generous diet, or any food likely at all to disorganise their bowels and bring on the dire complaint known as the "swelling."

Fits of convulsion when occurring to birds may be treated by holding the birds in a warm bath up to the neck, when after giving a drop of castor oil the patients may be placed before the fire to gradually dry. The bread-and-milk diet, with a little liquorice in the water, may be given for a couple of days after, or continued even longer if the birds do not quickly recover.

My course of treatment when caging-off young birds is to give them at first chopped egg and bun crumbs, with a little bisuit powder to the same. When the young are about a month old I introduce well-sifted Canary seed in the cage in a separate pot or tin, with the view of giving the birds a knowledge and opportunity of finding out what the seed is for, and chafing their beaks to the same by the time they may require the seed. Generally at about the age of six weeks old the young Canaries begin to shell the seed, and at that time the proportion of soft food may be gradually diminished until the seed at length takes the place of the egg and bun. After my young birds have left their parents I discontinue all green food until they have passed through the moult and their constitutions have become somewhat established. I then introduce a little hempseed throughout the winter, with occasional changes of millet, linseed, groats, crushed bisuit, and German rape (scalded). This treatment, with plenty of grit sand, a little salt, which is a good blood-purifier, with an occasional bath, keeping the birds free from draughts, tend to keep my birds pretty well in health.—Geo. J. BARNESBY.

ARTIFICIAL SWARM.

AMONG my surviving stocks of bees there was one so feeble that I had left it to its fate as not worthy of attention. However, the other day observing a few bees still going in and out with pollen, I thought I would examine it. The hive itself is a bar-framed hive with hollow sides—a "Crystal Palace Woodbury"—which I had been anxious to try. A little smoke blown

in at top enabled me to take out each bar-frame carefully. Some of the combs were attacked by wax moth, but a good deal of it was in excellent preservation; and in the centre comb on both sides I found a knot of bees, with about three hundred cells filled with brood and eggs, also some food in open cells, and a hybrid Italian queen, who appeared sufficiently lively. It occurred to me at once that I might increase my diminished stock by forming a swarm artificially. Hard by, too, was a stock of black bees over-supplied with drones, large numbers of which were still sealed-up in their cells. No sooner thought upon than decided. In five minutes after re-arranging and replacing combs and bees, I had moved away the stock of black bees to a remote part of my kitchen garden, and substituted the bar-framed hive, putting it exactly where the other had stood. As it was a fine day many bees were abroad, so that in the course of the afternoon there was every appearance of a good swarm in the bar-framed hive, and as they have since been extremely happy and active I have no doubt all is going on well. One of two things of course has happened—either the queen has been well received and is still there, or she has been destroyed, and in her place the bees are rearing a queen from the brood. Which-ever is the case I shall be sufficiently well pleased.

As for the stock of black bees, they, too, have pleased me well, for as the next day happened to be wet and gloomy they set to work destroying their drones, tearing the younger ones out of their cells. At least nine-tenths of them are gone, and there were so many that they seemed to equal the workers in number. The third day having come I moved these bees to a stand 2 yards distant from their place, and ever since activity and harmony have reigned in that part of my apiary.

It occurred to me to mention this case as one among many ways of forming swarms artificially. Of course this is a far easier method than the capital one by driving which Mr. Pettigrew detailed in a recent Journal.—B. & W.

BEE NOTES.

BEES in this part of the country have done better this year than in a good many other parts of the kingdom. The following is an account of my own.

I had three stocks last autumn, Nos. 1, 2, and 3; Nos. 1 and 2 were strong hives, and stood the winter well; but No. 3 very nearly perished, but I managed to save them. They are all three in common straw hives. No. 1 swarmed on May 28th, and I never saw a better swarm. I put it in a 16-inch Pettigrew hive, and the hive is about three-quarters full of comb. No. 2 swarmed on May 31st. I put it in a small Neighbour's hive, which is now full of comb, except a part about as big as my hand. No. 1 casted on June 6th, and No. 2 on June 11th. I put them both in common straw hives, which are about half full now. No. 3 has not swarmed yet I think, but am not quite sure; but if it has I have lost the swarm. Most of the cottagers' bees about here have swarmed. There are a good many bees kept, but in a very primitive style.—E. BURBURY MARTIN, *Evesham, Worcestershire.*

ITALIAN BEES.

It would tend very much to a settlement of the vexed question relating to the respective merits of Italian and English bees if those who keep both, or Italians alone, would record their experiences. The following questions in particular require attention: 1, Which variety is most active and breeds quickest in the early spring? 2, Which produces drones first? 3, Which swarms earliest and oftenest? 4, Which works earlier in the morning and later in the evening? 5, Which collects most honey (a) on the swarming, (b) on the non-swarming system? &c.

This year I have only half-bred Italians—miscalled hybrids—and common black bees. My leading hive, which has nearly filled with comb a large super as big as the hive itself, is one of the former. No. 2 is also a half-bred Italian, and has recovered rapidly from a very low ebb, promising well. No. 3 is the black stock which I have divided into two as elsewhere stated. Probably owing to its enormous number of drones I have seen no honey in it. The others have plenty of sealed honeycomb.—B. & W.

OUR LETTER BOX.

FOWLS EATING FEATHERS (C. W.).—Feather-eating is one of the penalties we pay for keeping fowls in confinement. They lack something which they cannot find, and feathers seem to be more like it than anything else. The disease was hardly ever met with years ago, save when fowls were put up to fatten. Then they used to eat each other's feathers, and no wonder. When fowls are kept in confinement they are generally tempted with all sorts of food, and these spiced and artificial meals are productive of great disease. Some adopt them because they are cheap, others because testimonials give glowing accounts of the number of eggs, their fertility, and the strength of the chickens. The result is feather-eating and elephantiasis. This latter is becoming the plague of yards. This results in the query we are answering. How shall I prevent it? We answer your question with another—Did you ever meet with Grouse, Partridge, or Pheasant suffering in this way? We know you have not. They feed naturally. Feed your fowls the same. They get grass, scattered grains of corn, grubs, worms, and all the (to us) unknown

things that cover the face of the earth. We often wish for increased powers of sight, and for knowledge that we might be able to see as a bird sees, and learn with wonder that the mound of earth to which a hen calls her chickens, and which to our eyes is "a mound of earth and nothing more," is in reality full of food, and if necessary medicine. Make your arrangements, then, to feed your chickens as naturally as you can, although you are obliged to keep them in confinement. Instead of stimulating food give cooling green food, especially lettuce. Give them plenty of fresh earth, and if your gardener digs up a barrowload of weeds and rubbish let them be emptied in the run, the fowls will scratch them all over the place, and find that which will do away with the desire to eat feathers. It may be asked what we term natural food. Sods of grass with plenty of mould, lettuce or other green food pulled from the earth and eaten fresh, ground oats or barley meal, maize and barley given whole, and house scraps. Follow Nature.

FOWLS UNHEALTHY (H. O. F.).—You are not sufficiently explicit. What is the nature of the yard in which your fowls run? Is it paved with flag stones? No other explanation is necessary if such be the case, and your scrupulous cleanliness makes matters worse. Fancy such a place, and be not surprised if the fowls sit or squat all day. Imagine yourself in the great desert with faultless shoes and stockings, and hot dry sand up to the calves of your legs: you will be as comfortable as your fowls. Hard stones, the foot stretched out as far as possible, and no scratch; the counted or measured grains of food lying in their clean distinctness, and swallowed without a grit; the total absence of the dust bath. Dirt or any evil smell are bad for poultry, but it is almost as bad to be faultlessly clean. Give up your pen-meat, oats, and food. Give them plenty of green food, barrowloads of earth, and feed sparingly. Read our previous answer.

PRESERVING EGGS (Constant Reader).—They must be put in fresh. It is idle to put up a stale egg and expect to take it out fresh. We have eggs now that have been kept twelve months, and are perfectly fit for any culinary purpose. We generally use a glazed bread pan. The bottom should be covered with slaked lime wetted to a consistency that will allow anything put in it to stand upright. The bottom layers of lime will be 2 inches thick. The eggs are stuck in this small and downwards close together, but not touching. When the bottom layer is full, then a fresh mixture of slaked lime is poured till thick enough for the eggs to stand up in it, and so on till the pan is full. The eggs should be perfectly sound in shell, not cracked or in any way injured, and they must not touch each other.

SUPPLEMENT COMBS IN HIVE (F. J.).—We have frequently advised in these pages the use of cross-sticks in hives to steady and support their combs. In swarming two of your hives you have shaken down their combs, and thus learned the value of cross-sticks. Hives without cross-sticks are easily injured in handling and removing them in warm weather. Cross-sticks are of great service in hives to the bees, as well as a support to the combs. You will have to learn by experience the best mode of running honey from the combs, as it is very difficult to convey information on the question by words or writing. Some kinds of honey will run from broken combs without pressure, and some kinds will not. We use pressure in every case, and run the honey through a bag of cheese-cloth before it cools or loses its natural heat. After twenty-four hours it is skimmed and fit for sale. All letters of inquiry should be sent to the Editors.

METEOROLOGICAL OBSERVATIONS.

GARDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Barom.		Hygrometer.		Direction of Wind.	Temp. of Air.	Shade Temperature.		Radiation Temperature.	
	Barom. at Sea Level.	Dry.	Wet.	Deg.			Max.	Min.	In sun.	On grass.
1878.										
June.										
We. 21	Inches. 29.975	deg. 74.4	deg. 55.7	E.	deg. 63.0	deg. 84.8	deg. 57.3	deg. 137.2	deg. 53.0	In. —
Th. 22	29.973	64.4	53.0	N.W.	64.0	78.8	58.1	137.0	57.4	0.314
Fri. 23	29.945	57.4	55.5	W.	68.4	67.8	67.1	137.0	57.3	0.189
Sat. 24	29.911	61.8	58.8	N.E.	61.3	71.8	55.8	133.3	58.1	—
Sun. 25	29.866	57.8	55.8	N.E.	60.7	74.8	56.8	132.4	56.5	—
Mon. 26	29.904	58.6	55.8	N.	61.7	77.8	53.8	133.3	49.3	—
Tu. 27	29.158	55.3	51.1	N.	62.5	80.9	48.9	137.4	47.5	—
Means	29.976	65.9	61.0		61.3	76.1	54.5	130.0	51.7	0.294

REMARKS.

- 21st.—A very fine day throughout, though looking rather stormlike between 5 and 6 P.M.
 22nd.—Fine morning, not so hot as yesterday; a short sharp shower between 10 and 11 A.M.; but little sun, and the air very heavy.
 23rd.—Rain in the night and early morning; dull and damp till the evening, then bright, and a starry night.
 24th.—Rather heavy, though short shower about 8 A.M.; fair afternoon and evening.
 25th.—A very fine day throughout; the sun very hot, but a rather high wind blowing from the north tempered the heat and made it very pleasant.
 26th.—A very fine day, though warm not oppressively so; the stars unusually bright at night.
 27th.—Another very fine day, the wind still northerly; a thick mist or fog A very fine summer week, temperature about 5° above that of the previous week.—G. J. SYMONS.

COVENT GARDEN MARKET.—JUNE 28.

THE late fine weather has sent a large quantity of outdoor fruit into the market, Strawberries especially arriving in very good condition; and plentiful hot-house fruit is well supplied, with a fair amount of business doing.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	5	0	0	Malberries.....	lb.	0	6	0
Apricots.....	box	1	5	0	Nectarines.....	dozen	8	0	21
Cherries.....	box	1	0	0	Oranges.....	100	0	0	13
Chestnuts.....	bushel	0	0	0	Peaches.....	dozen	8	0	25
Currants.....	1	5	0	0	Pears, kitchen.....	dozen	0	0	0
Black.....	do.	0	0	0	Pears, dessert.....	dozen	0	0	0
Figs.....	dozen	9	0	15	Pine Apples.....	lb.	1	0	0
Guavas.....	lb.	0	0	0	Pineapples.....	1	5	0	0
Quinces.....	lb.	0	0	1	Quinces.....	bushel	0	0	0
Raspberries.....	lb.	0	0	0	Raspberries.....	lb.	0	0	0
Strawberries.....	lb.	2	0	0	Strawberries.....	lb.	0	0	2
Walnuts.....	100	0	12	0	Walnuts.....	bushel	4	0	10
Melons.....	each	3	0	10	Melons.....	100	1	0	0

